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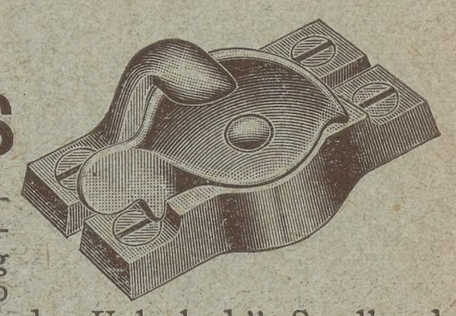

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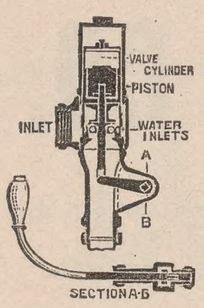

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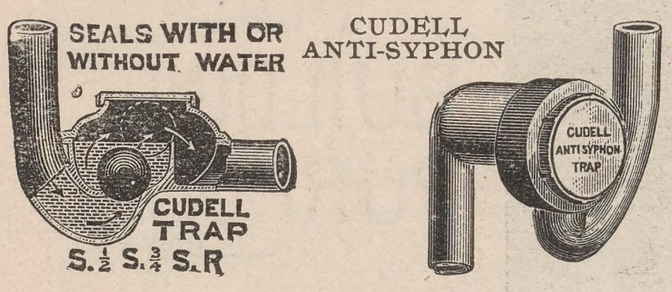

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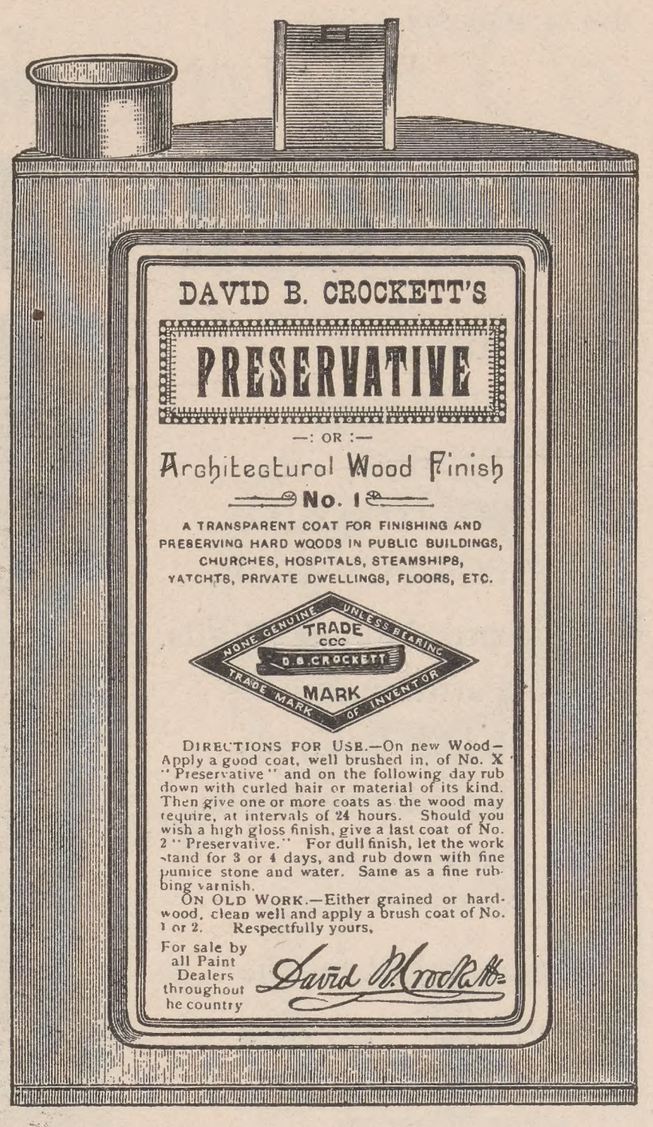

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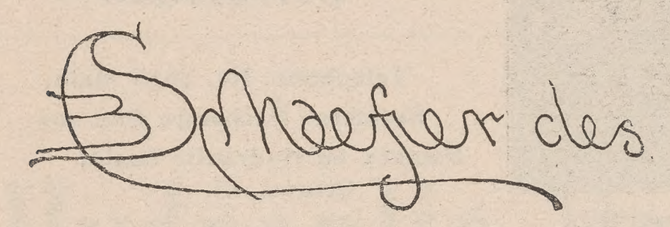

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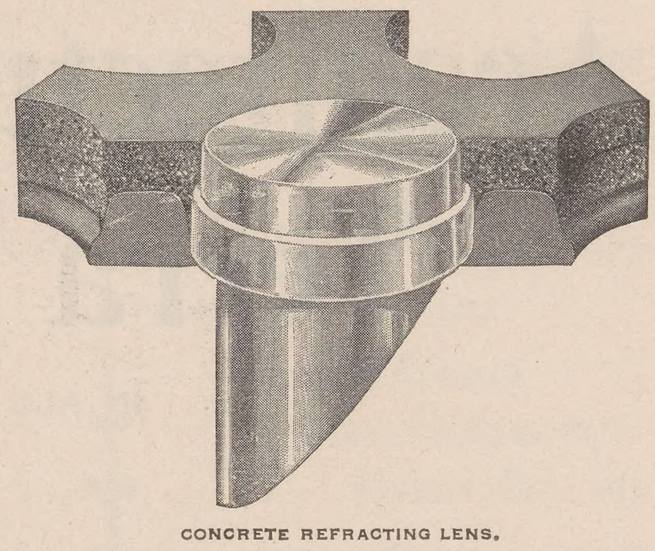

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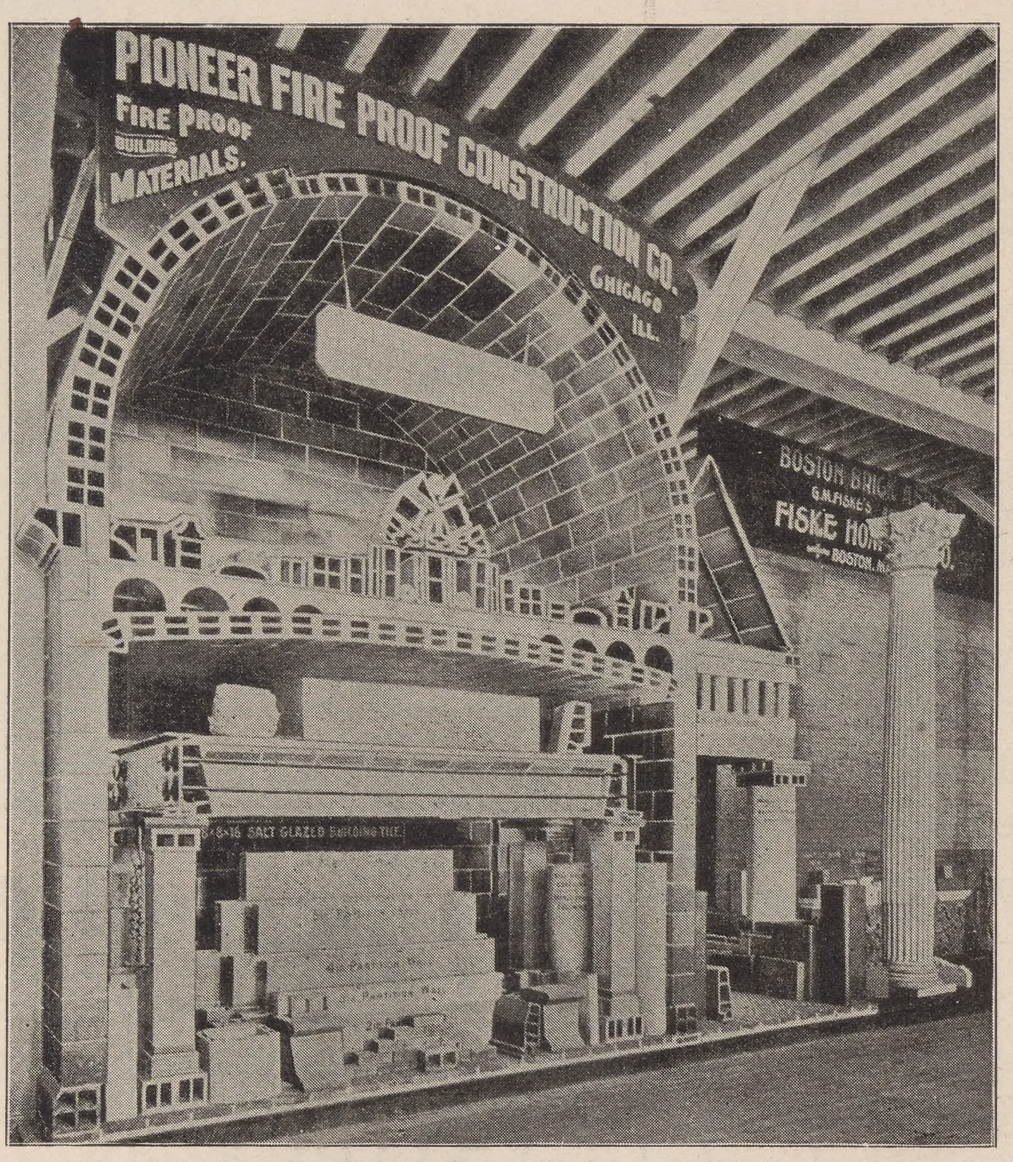

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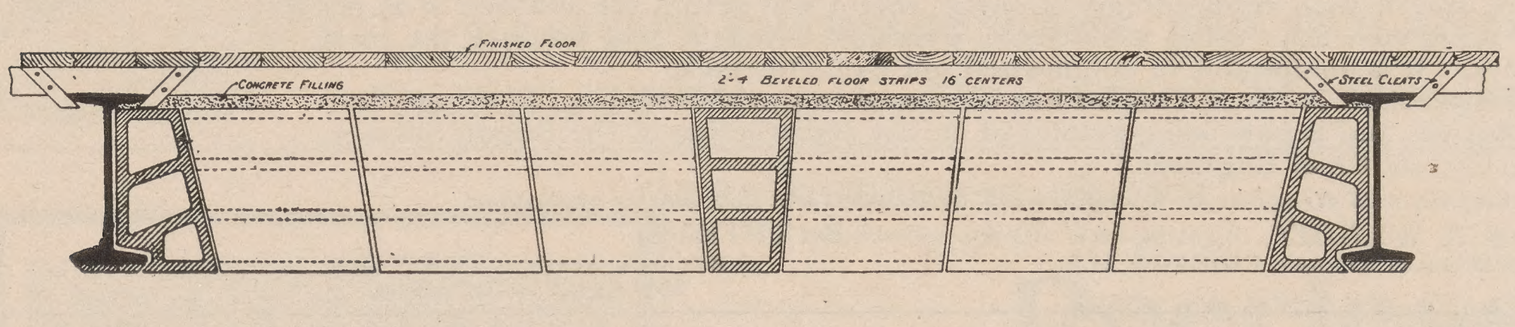

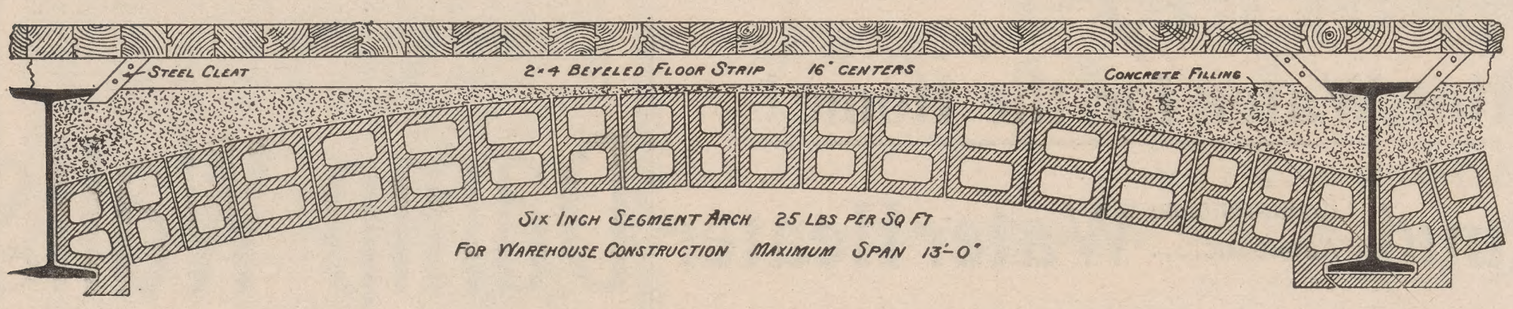

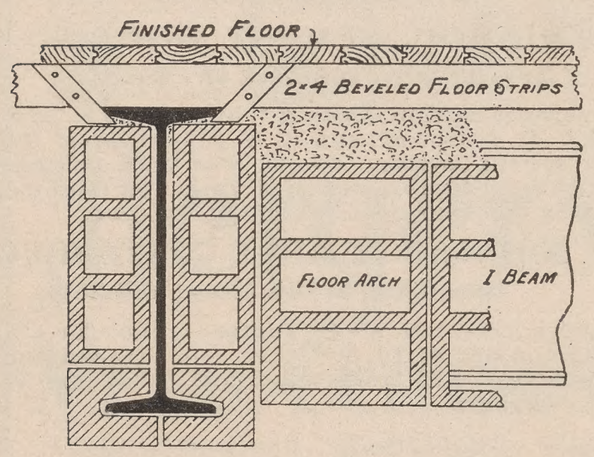

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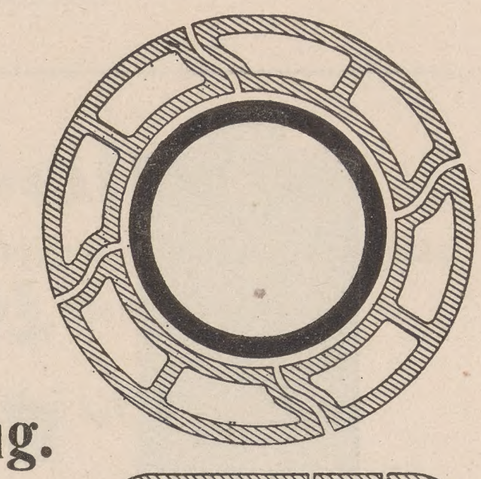

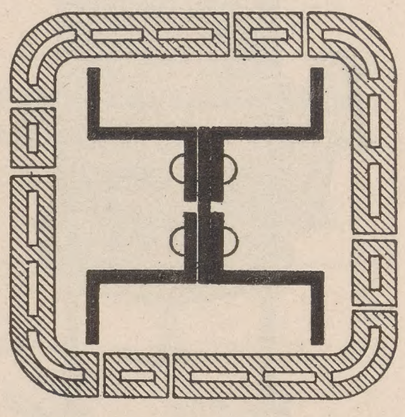

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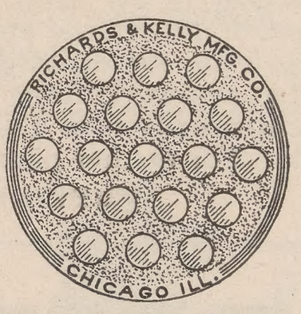

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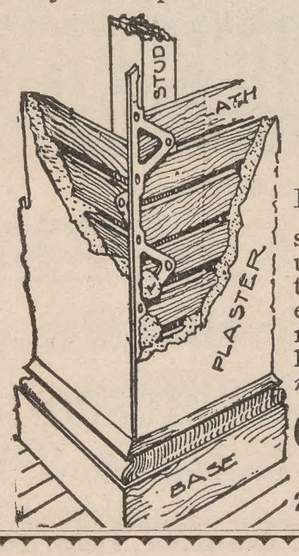

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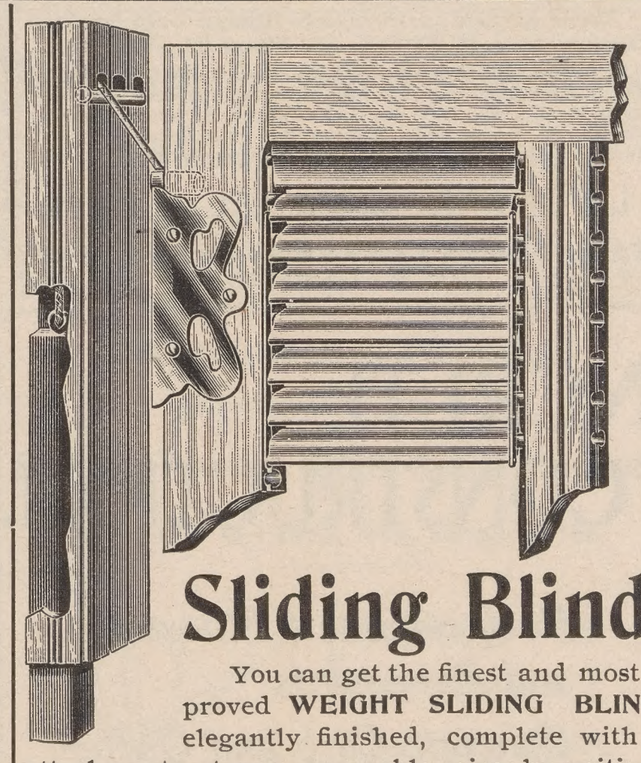

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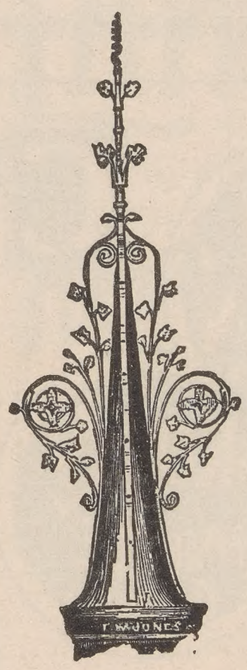

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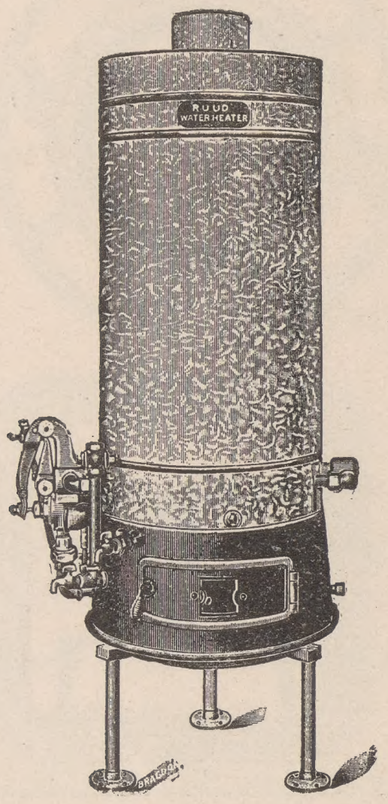

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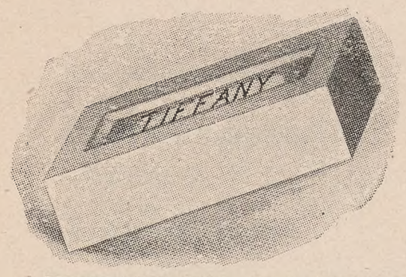

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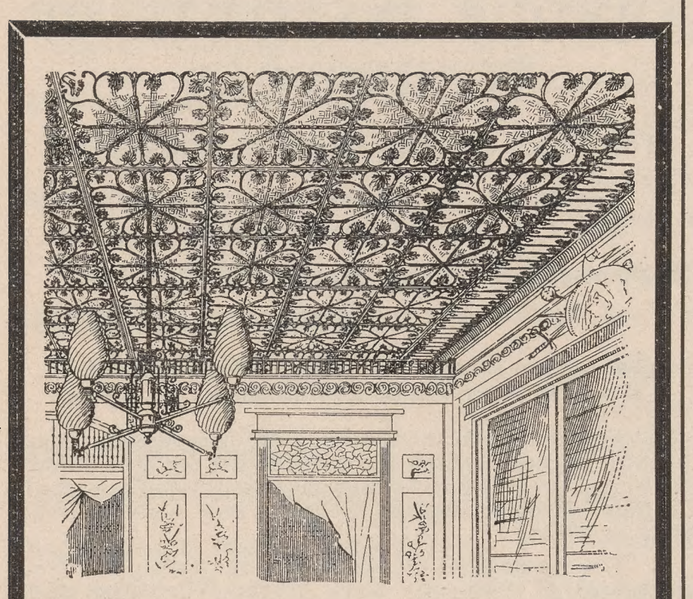

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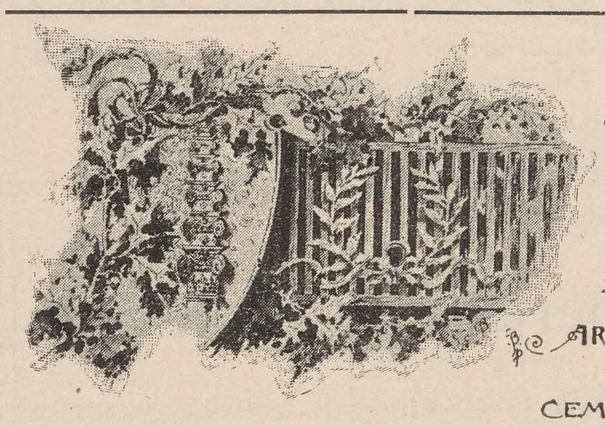

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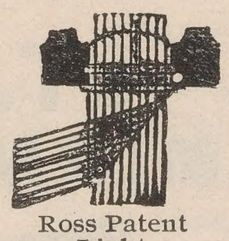

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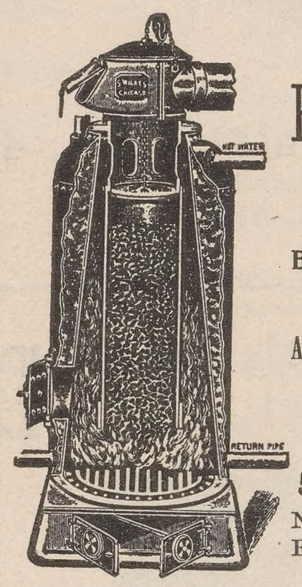

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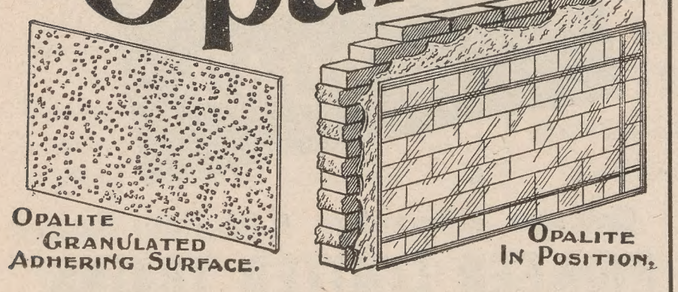

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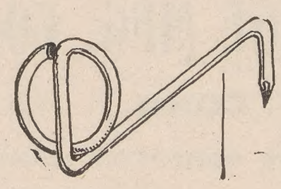

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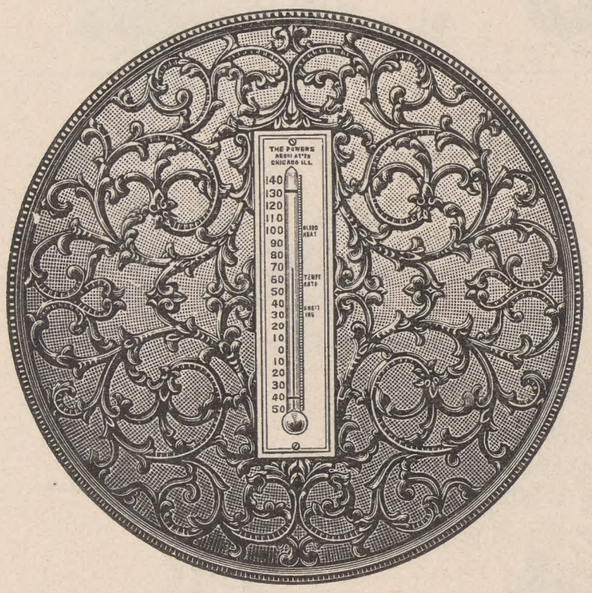

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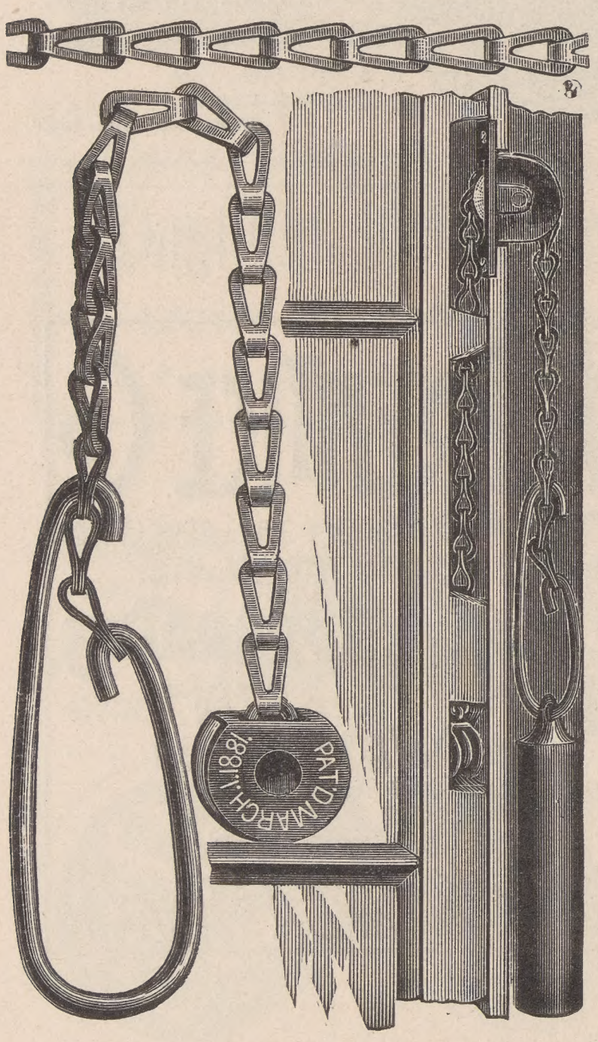

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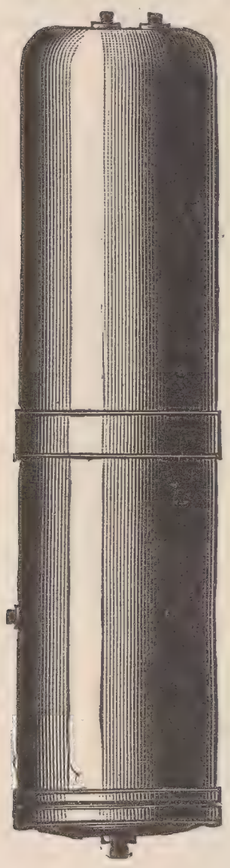

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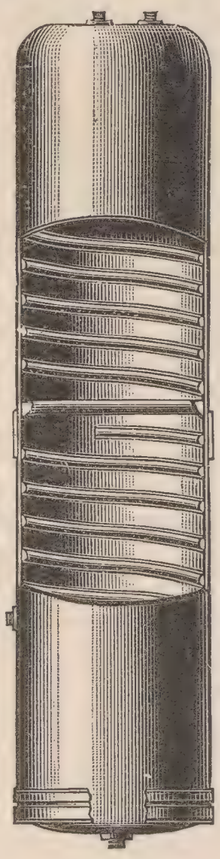

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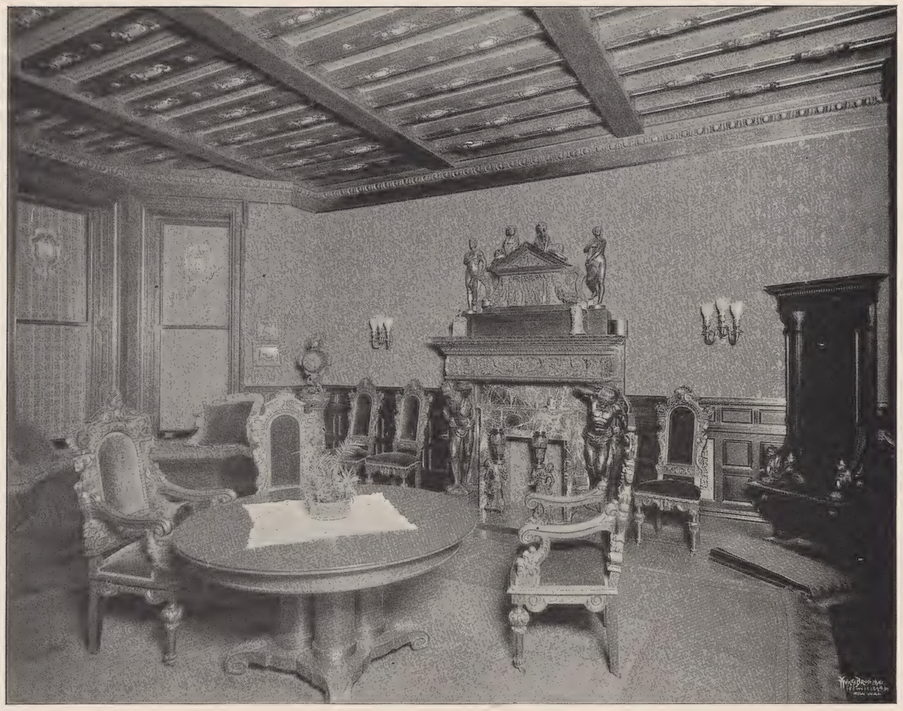

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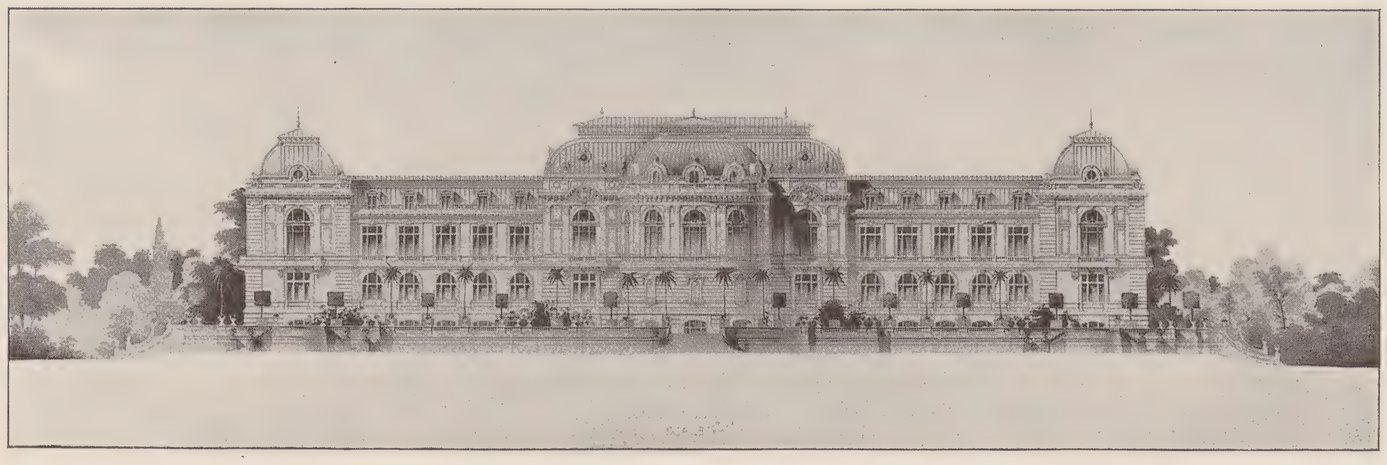

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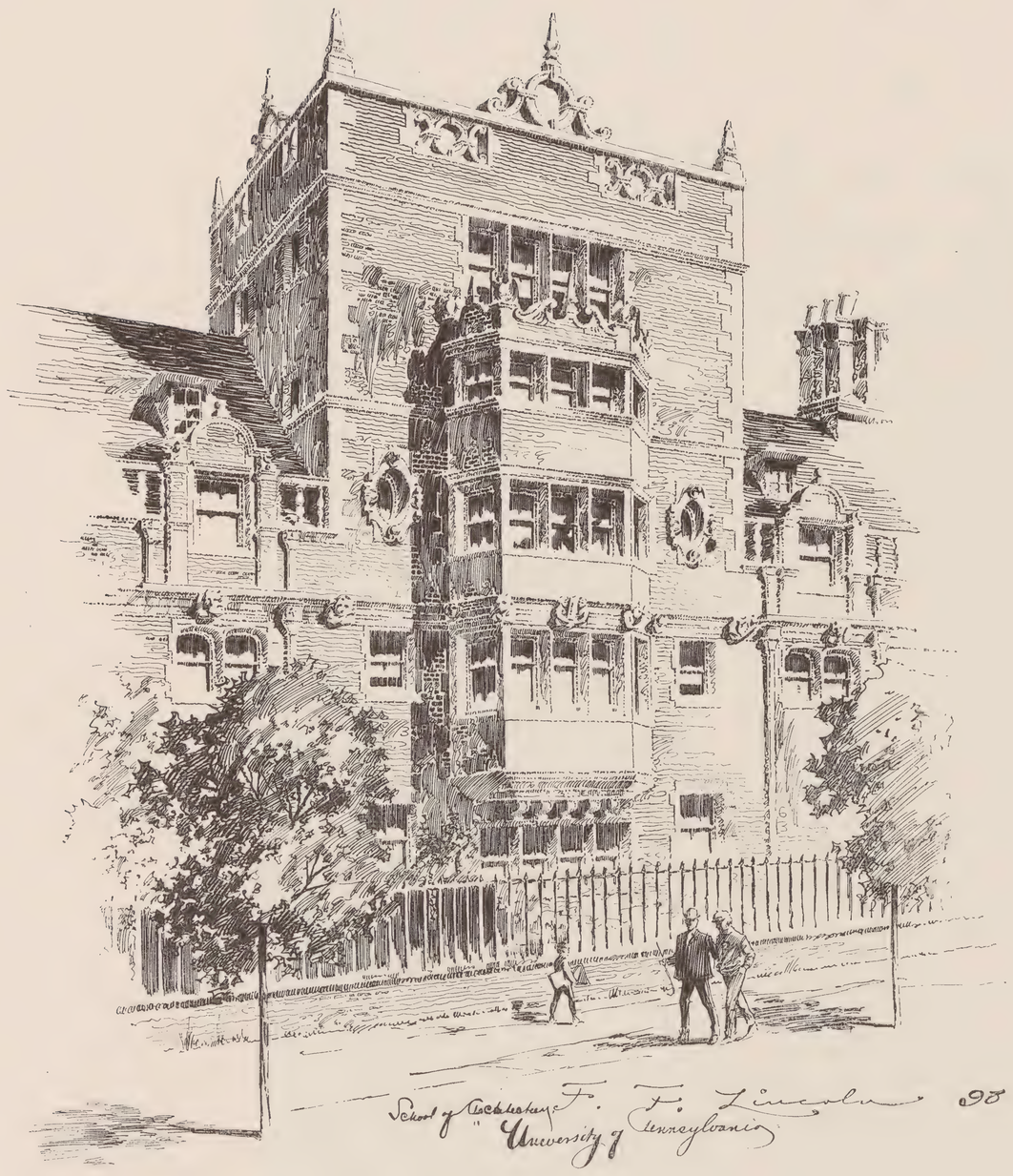

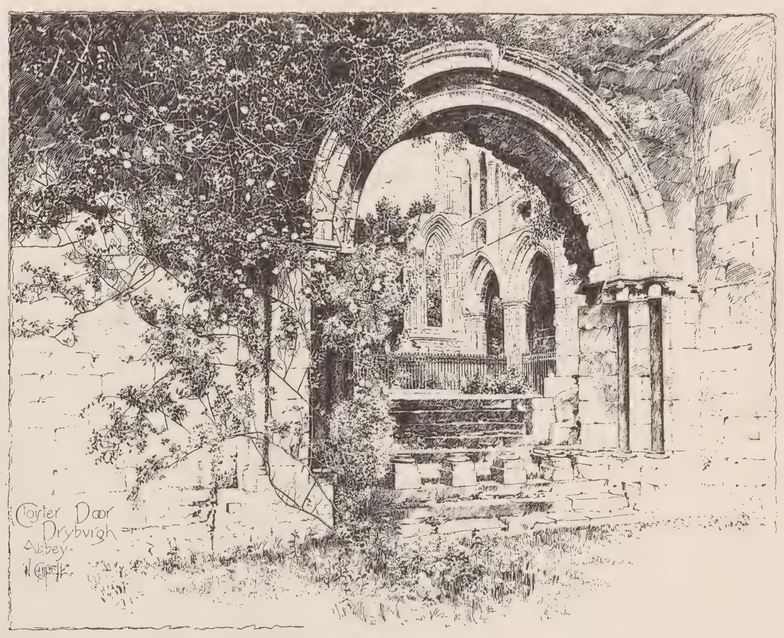

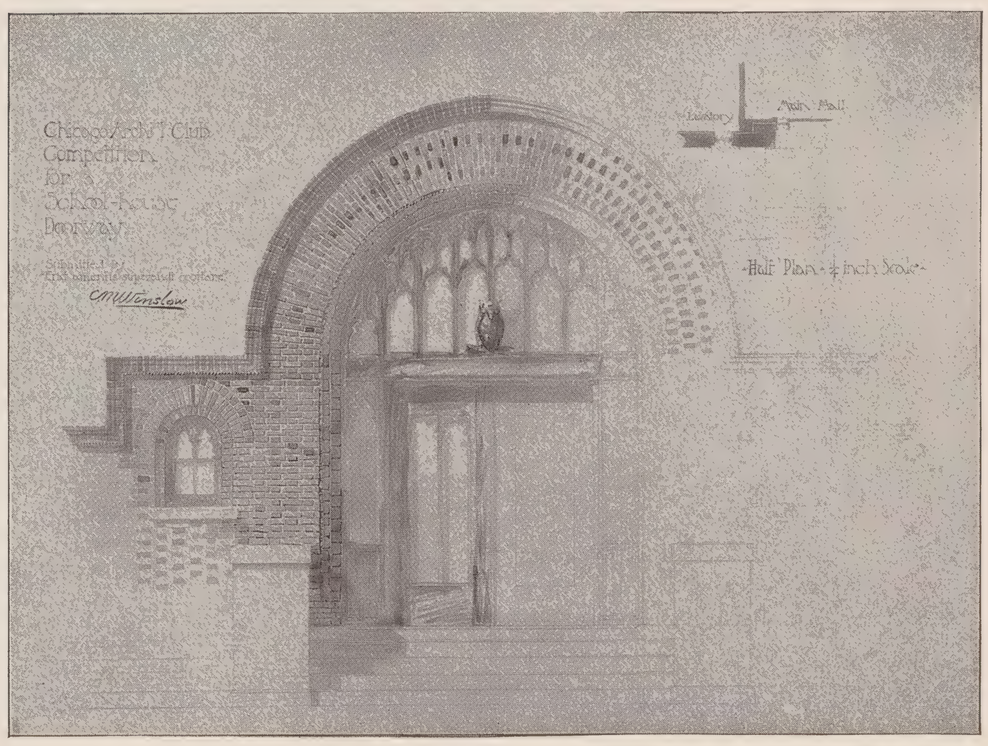

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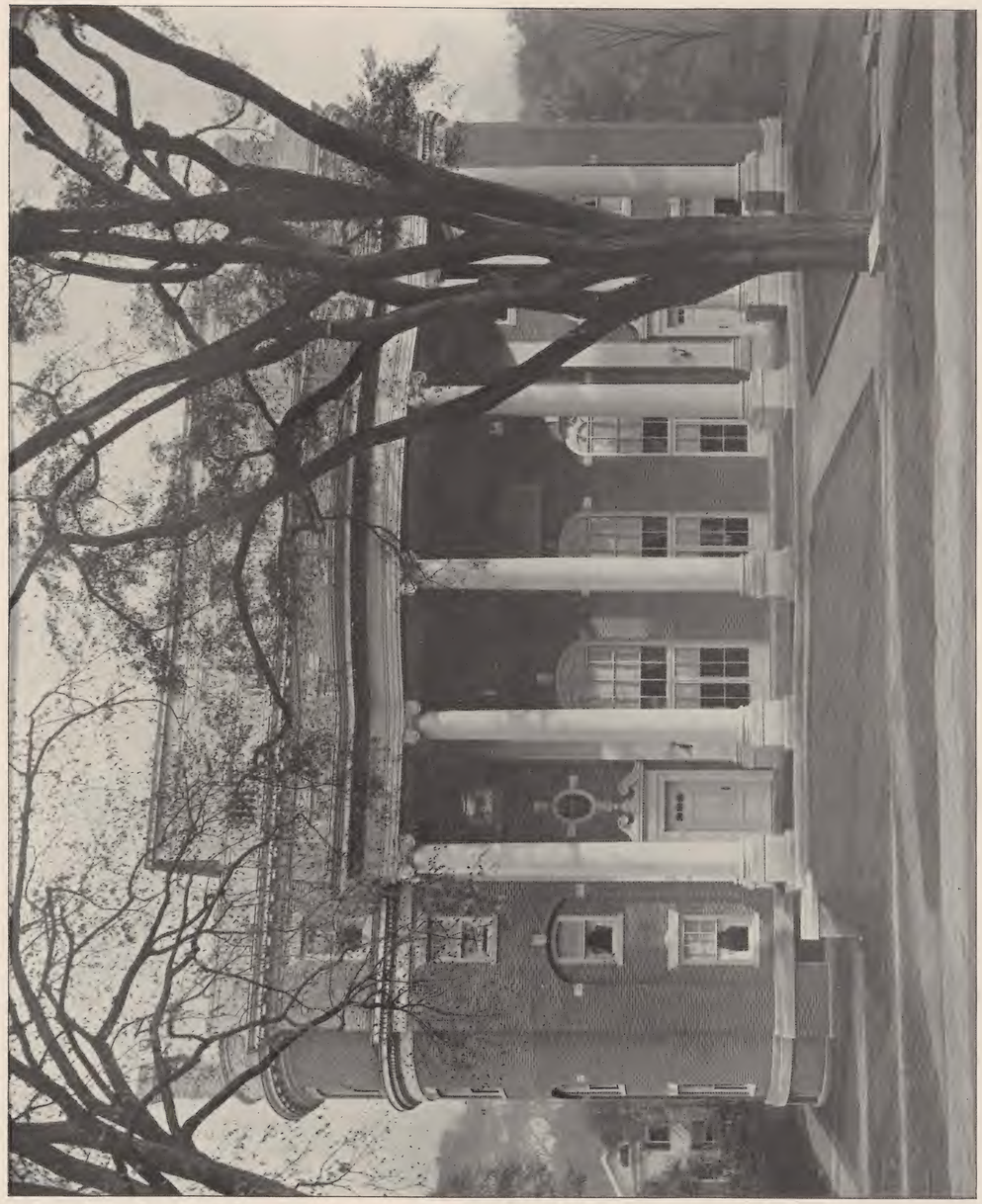

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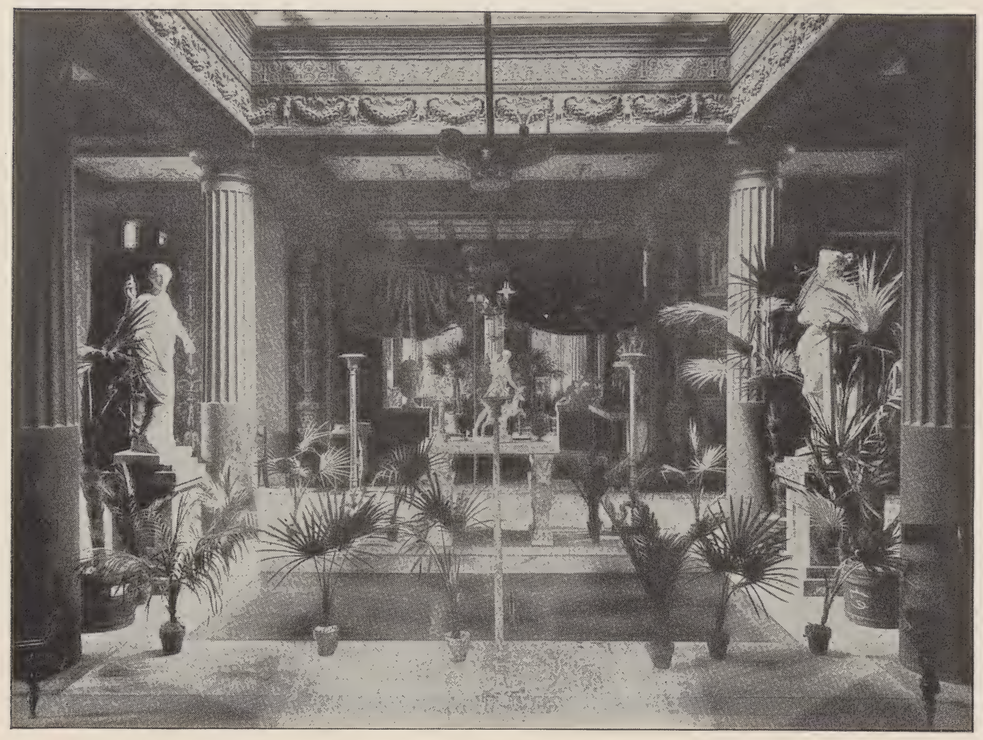

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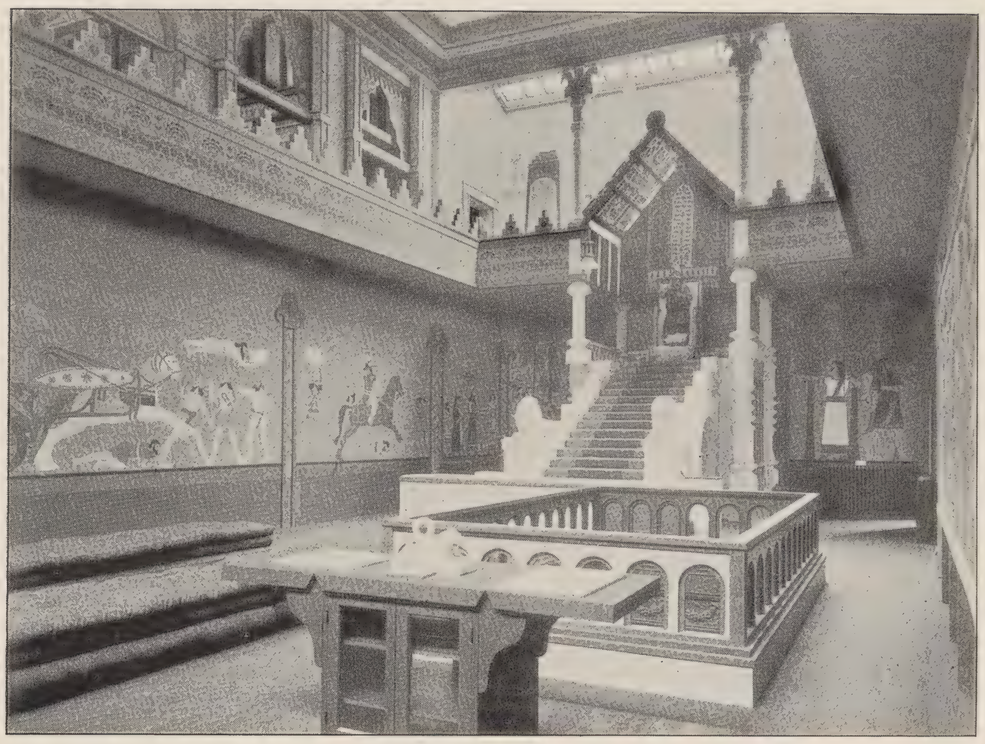

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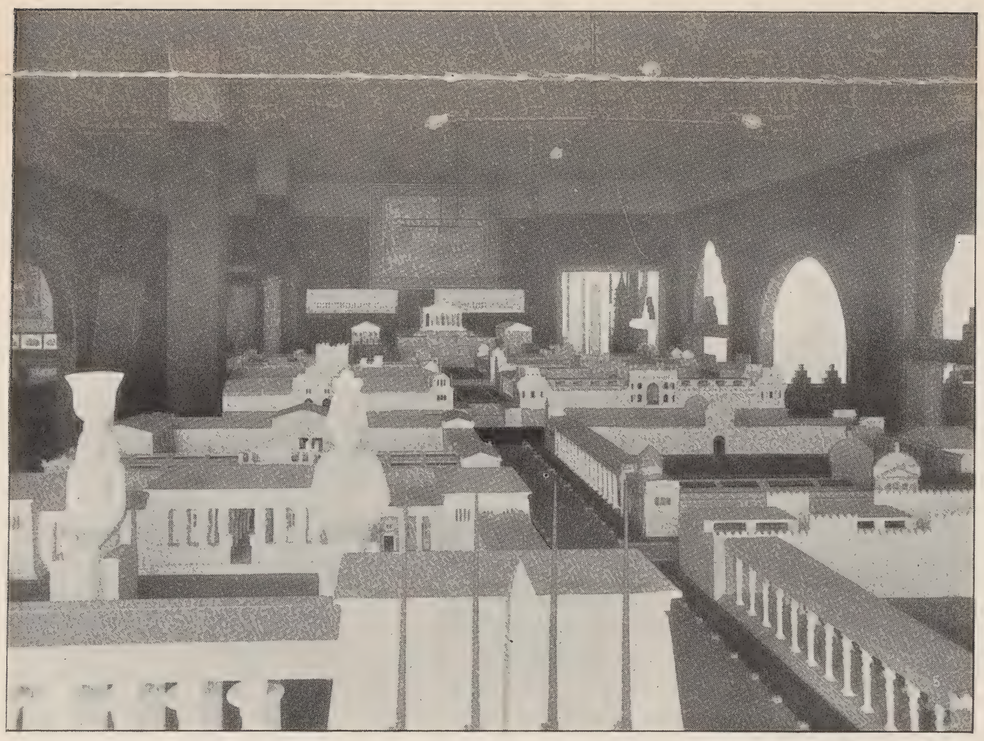

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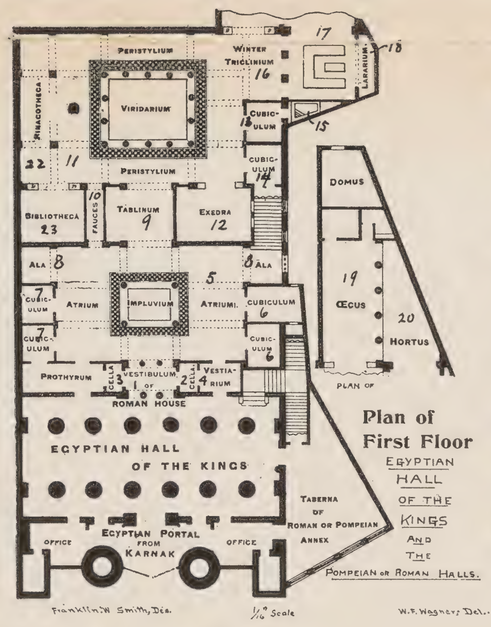

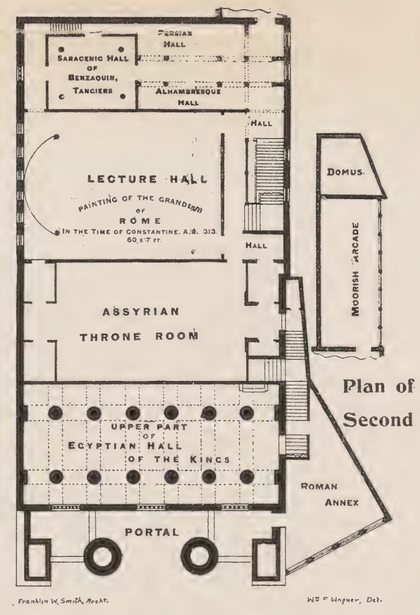

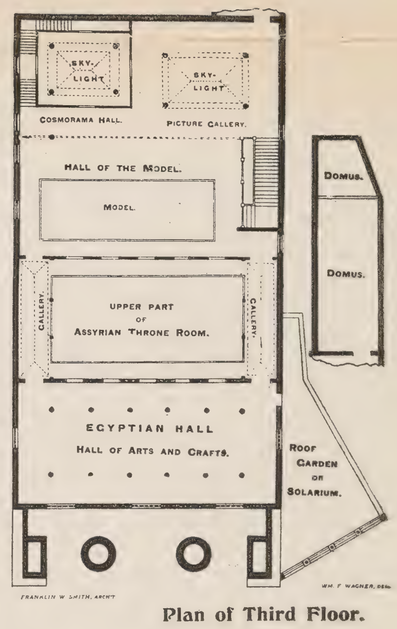

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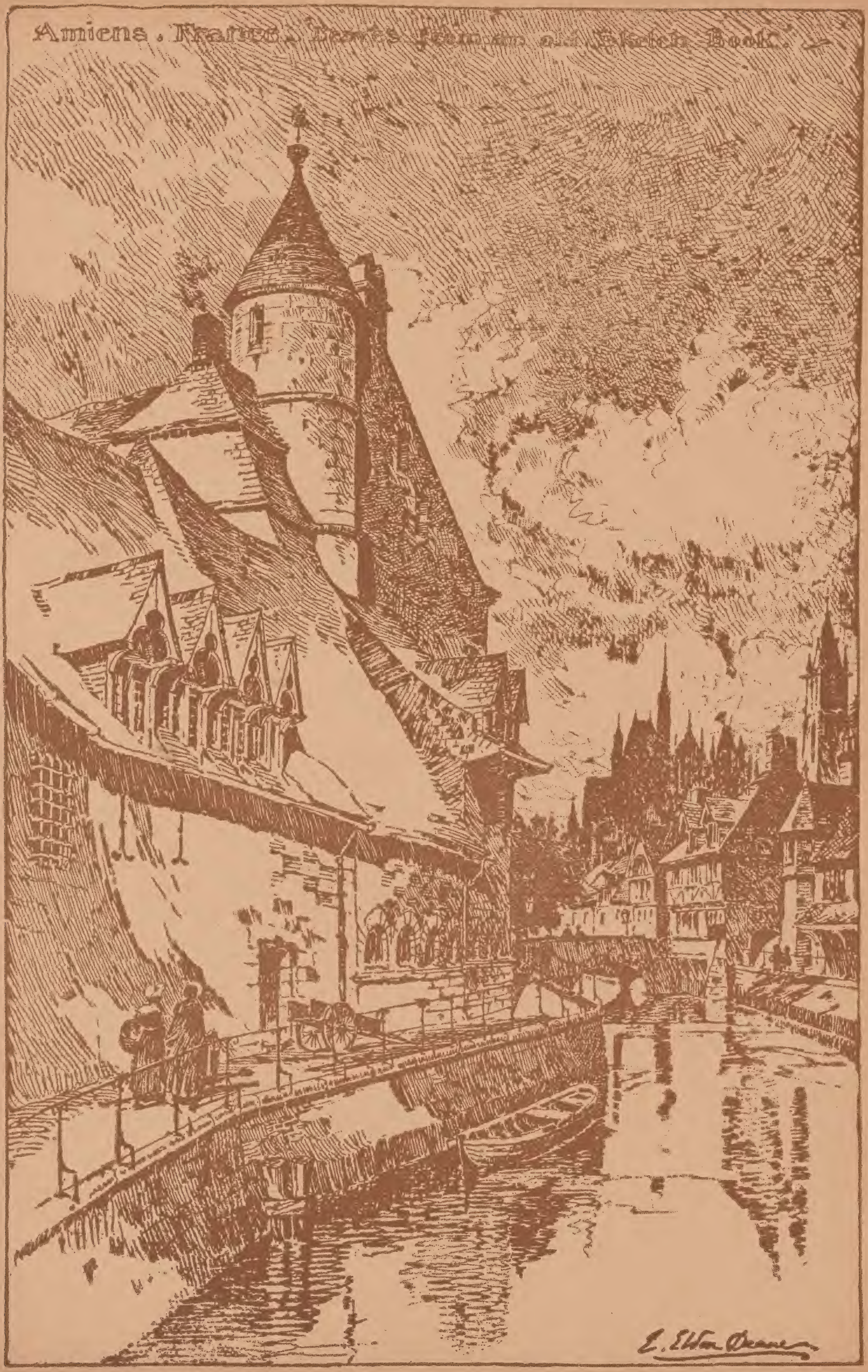
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An Obnoxious Labor Law that Should Be Repealed.

As was apparent to everyone except its unthinking indorsers in regard to the detrimental effects of the law passed in New York State three years ago, restricting stonecutting upon State and municipal buildings to local stonecutters, has it proved a boomerang, and a committee of New York builders has presented to the Legislature a bill for its repeal. The measure which established this law was gotten up by the trades unions, and with the ignorance and carelessness for the rights of others usual with the managers of these societies, they only looked at the subject from one standpoint, and the result has been detrimental to every interest involved, and an absolute hardship upon the stonecutter. It is easier to make laws than to repeal them, and while the workingman allows those whom he knows to be his inferiors in everything but the ability to talk to think for him, and there are legislators who care nothing for the general good, but only for a vote secured by mendacious methods, these pernicious laws will continue to fill the statute books of the States.

The Folly of Constructing Combustible Buildings.

Three recent fires, two of them attended by a terrible loss of life, and involving hundreds of thousands of dollars, have called attention in the most forcible manner to the necessity for fireproofing all important structures. The burning of a tenement house and many of its occupants gives a "scare head" to a newspaper and a passing thought to the reader, but fire seems to have left the unprotected and those unable to choose their place of residence and invaded the abodes of the wealthy, and thus called the attention of this class most forcibly to a folly that is almost beyond belief. The Windsor Hotel fire was only extraordinary from the fact that those who could live in a fireproofed hotel were living within its unstable walls. The conflagration that exterminated a whole family was just what could be expected at any time, and still it is most probable that the architect who designed the Andrews residence and those of his neighbors called the attention of the owner to the desirability of fireproofing the structures. A public library which recently burned with a contents only less valuable than human lives calls attention to the shortsightedness of those whom the people trust to build for them. The cost in money to build a fireproofed structure is but a small percentage to pay for the protection it gives, and if such examples as have been placed before the people of this country of the folly involved in avoiding this expense where it can least be spared fails to be effective, the entire range of building laws should be altered to meet the issue. For twenty years the subject of fireproofing buildings effectively and still conforming to the uses of the structure and its design has exercised the inventive genius of some of the best builders in the country, and today their efforts are too little appreciated, and as a result we have this enormous and needless destruction of life and property. Most intelligent people are becoming convinced that fireproofed interiors are as necessary to a building as stable walls, and are learning that the best systems only should be used as a protection against fire.

A STONE'S throw from the Treasury building, here in Washington, on New York avenue, stands a school unique in character, wonderfully interesting in its teachings and, so far, most lamentably unattended by seekers after knowledge. A school of a particular value to the architect, and yet I venture that of the hundreds of my confrères who have visited Washington since that (what I call) school was completed not ten have even been near it — not they; prospects of possible Tarsney-act benefits resulting from visits, in company with senatorial sponsors, to the Lord High Executioner of the Treasury are of vastly more importance than mere education — that, after all, can always be bought ready-made. . . .

I started out to ramble through a school and here I am heaping contumely upon the architects, Heaven bless them!

My school, let me explain, is only a school in one sense of the word, and that calls for a little more explanation, to wit: Mr. Franklin W. Smith, of Boston, a man of deep research, an Egyptologist, archæologist, traveler, scientist, a man of years and vast experience, and last (the only thing I have against him), an enthusiast, thinking to benefit his fellow-men and incidentally hoping to, at least, get a wee return for his trouble, has built a structure here called the "Halls of the Ancients" that merits more than a passing notice.

He has had experience with such structures; his Moorish villa in Florida and his Pompeian House at Saratoga are gems, works of art and well known.

His first notion was to build a great national series of galleries of history here; an affair involving $10,000,000 or more, examples of Greek, Roman and Egyptian temples, coliseums, the Forum; reproductions on a large scale of historical structures, gardens, fortifications, etc. Private capital shied at such an undertaking, however, although millions are dumped every year into vastly more chimerical schemes or endowed upon comparatively useless institutions. If private capital balked, imagine what hopes he can have for legislative assistance — Smithmeyer & Pelz still unpaid for the Library plans, armor plate at $300 a ton, a Nicaragua canal "sat upon," are a few of the indications of how the wind blows from that direction.

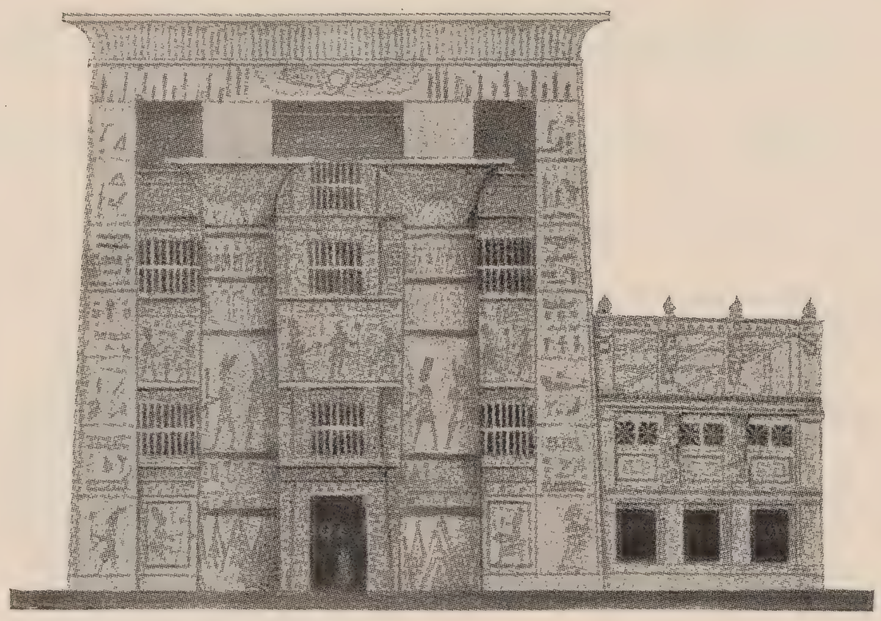
Pending the materialization of his greater scheme — and Mr. Smith, though his hair is frosted with the snows of many winters, is of the stuff that does not give up readily — he has erected this *one* building and called it the "Halls of the Ancients." On the third floor is a small model of what he would *like* to build; note the Egyptian temple in the foreground, in whose court sit the two huge sphinxes, and at the far end of the room the Acropolis. A visit to this room alone, to the architect, the man who cares to actually *see* the works of those ancient craftsmen, is, in the vernacular, well worth the entire and modest price of admission. And yet it forms but an infinitesimal part of the whole.

His scheme merits the heartiest support of every Washingtonian, and his building a visit from every tourist, visitor, office-seeker or other sojourner in this city of blizzards and historical investigations.

My professional brethren will get a better idea of this building from the plans, section and photos I offer them here than I could convey by my rambling words; yet, from these more graphic aids they can form no adequate idea of the richness of color, the beautiful combinations, the accuracy of detail that the originals present. And the best I can do is to urge them to visit the reality in the flesh. To one having but three days to see Washington in I would say: one day for a drive around our beautiful streets — provided there be not three feet of snow — visiting the departments, shaking hands with the President and boring his Congressmen; one day for the Capitol and the Library, and the last day spent in the "Halls of the Ancients." A building of about 60 by 120 feet, of stucco and brick, an exterior that, by its shape, color and detail, at once tells the story of its purpose. As you enter you pass through an Egyptian portal which is a reproduction of a section of the Hypostyle Hall of Karnak, in the exact size of the original, the columns 70 feet high and 12 feet in diameter, and enter a hall of Egyptian columns larger and more beautiful than that built by Lepsius in the museum at Berlin. Then you enter a Roman house, complete, covering 10,000 square feet, larger than the "House of Pansa" at Saratoga, the decorations copied in part from the "House of Vettius," is full of interest in all its details. This house occupies the first floor, portions of the intermediate stories and a wing to the right of the main building.

Then on the second floor there is an Assyrian throne room, with the throne of Xerxes from Persepolis at the eastern end, with Sennacherib sitting on it, and with casts and paintings and bas-reliefs. There are also Saracenic halls, with traceries from the Alhambra, and a counterpart of the interior of the house of Benzaquin in Tangiers. The lecture hall, ornamented in Persian style, contains a reproduction, in a canvas of 500 square feet, of the painting by Buhlmann and Wagner, of Munich, representing Rome in the time of Constantine. The art gallery proper is devoted to illustrations of Roman history, containing 102 plates from Pinelli's "Istoria Romana," and three canvases, 7 by 10 feet, on which three of the engravings have been reproduced in colors to show the method of presenting such pictures in the proposed Roman galleries.

Altogether it is a most interesting place, and well worthy of close study in itself, although to Mr. Smith it is simply a finger



HALLS OF THE ANCIENTS.

post pointing to his great galleries for the illustration of the history, architecture, arts and crafts, manners and customs, of the great countries and times of the world.

The upper rooms are of the greatest interest, but one is more attracted to the Roman house; it is a continuity, a completed structure with nothing fragmentary about it. One wishing to read Gibbon's "Rise and Fall of the Roman Empire" or "Quo Vadis" could select no better place on earth than that first floor of the Halls of the Ancients. There he has all the proper accompaniments. He may lie upon a sumptuous couch and imagine there are savory viands upon the dishes of silver and of gold that he *does* see — in fact, if he could borrow a toga from Mr. Smith's splendid wardrobe, he might imagine himself a real old Roman, and the Lord only knows what capers he would be up to next!

A more detailed description of this villa may not be out of place:

The arrangement of the houses of Pompeii was generally upon the plan of all Roman houses of the period, and conformed closely to the prescribed proportions of Vitruvius, whose authoritative work has come down to us. It therefore lends an additional interest to the Pompeian house, that in it we see the usual Roman habitations in the time of Christ. The homes of the citizens differed only in size and grandeur, according to the wealth of the owner; the ornaments, wall decorations, etc., varied by individual taste. To understand clearly the construction of a Pompeian house, it should be remembered that it was divided into two

parts — one for family use, the other for the public. This remarkable feature sprang from the "Constitution of Rome," which permitted each patrician to draw about him as large a number of plebeians as his rank or influence could attract. These clients, as they were called, had free access to the houses of their patrons, for political conference, or advice, and they were cordially welcomed, as their votes and influence were of importance. Early in the day they assembled under his roof, awaiting his presence, to ask favors or seek his aid. It was, therefore, indispensable that family privacy should be secured by special construction.

Thus the *Atrium* and *Alæ* were quite freely appropriated by the dependants or retainers. The private rooms, called the *Penetralia*, consisted of the *Tablinum*, in the center of the house, the *Peristylium* (court), the *Cubicula* (bedrooms), *Triclinia* (dining rooms), *Bibliotheca* (library), *Exedra* (conversation room), *Pinacotheca* (picture room), *Culina* (kitchen), *Lararium* (private altar), *Balneum* (bathroom), and the *Zystus*, or small garden.

No. 1. The *Vestibule*, opens outwardly upon the street, and inwardly upon the atrium, or hall. The first object which greets the eye is a fierce dog in the act of springing upon the visitor. This device, in mosaic, was common to the larger houses, and indicates that it was a reminder of a dangerous dog within; quite necessary where houses stood so invitingly open. Beneath is written the warning "Cave Canem" (beware of the dog).

In the vestibule are brackets with busts of "The Great and Good." This was a custom not only in Pompeii, but Rome; by which Socrates, Plato, Cicero and Homer, and others, were installed as exemplars. "*Salve*" (welcome) greets the visitor from the pavement as he enters the dwelling.

Nos. 2, 3, *Cella Ostiarii*. The small rooms at the side of the vestibule were the porters, who frequently were chained slaves.

No. 4. The *Vestiarium*, or wardrobe.

No. 5. The *Atrium* was an imposing hall, where the master of the house received all who were not admitted to the inner apartments. In the center of the roof is seen the *Compluvium* (with a sacrificial cornice of festoons and skulls of bulls), toward which the roof sloped in order to throw rain water into the *Impluvium*— a marble pool, in the floor, where the fountain throws its cooling spray into the air; the bottom painted as a reflection of the sky above. At the corners of the compluvium roof are the lions' heads through which spouts carried the water into the pool, whence they passed into other cisterns, to be used for household purposes.

Tables, chairs, couches, musical instruments, tripods, candelabra and all other furniture have been reproduced from originals, preserved in the Naples Museum or from wall pictures found in Pompeii and Herculaneum and models in the Naples Museum. The lamps also are modeled from one of the richest patterns in the great work on antiquities of Herculaneum. Every household article, from the most elaborate furniture, to the most ordinary kitchen utensil, was executed with an artistic grace which reaches the acme of elegance. Even colanders were perforated with graceful designs.

On the south wall of the atrium is reproduced one of the richest mural decorations of Pompeii. The two floating Bacchantes in the central panel are from Herculaneum. On the north wall are four splendid panels — figure of History from the Pompeian Forum, floating Bacchante and two Centaurs from Herculaneum.

Beneath the four panels are copies of four miniature allegorical scenes of Genii from the House of Vettius. Nothing more exquisite has been found in Pompeii. Fairy sprites revel as florists, as vintners at a chase, and as goldsmiths.

Nos. 6, 7 are *Cubicula* (bedrooms) ranged on sides of the atrium. These were invariably small and dimly lighted. Their inconvenience, to modern view, is explained only by the custom of the Romans to sleep in their apparel, and on awakening, to resort to their magnificent public baths for warm and cold ablutions, and an elaborate toilet, with oils, perfumes, the friction of the strigil, and all the appurtenances of those vast and luxurious establishments. The cubicula are the exact size of those in the stately House of Pansa. Specially noticeable is the bed made after the bronze original exhumed in Pompeii, with its exquisite modeling.

No. 8. *Alæ*, or wings, on either side of the tablinum, were recesses used for rest, or conversation. The ceilings are precise in size and color from Nicollini, in the richest color-work yet issued upon Pompeian art.

The head of Achilles is a well-executed copy from the great Homeric painting found in the "House of the Tragic Poet," and founded upon scenes in the "Iliad." The illustrious Greek warrior is looking at his enemies bearing away his beloved handmaiden, Briseis; his eyes glowing with indignation, and his brow contracted with suppressed emotion. The face, so full of fire, and animated with a divinity difficult to express, has given it the reputation of the finest youthful head left in ancient color.

No. 9. The *Tablinum*, a central apartment entered from the atrium. This was the private retreat of the master of the house; his sanctum, where, in cabinets, were kept busts of ancestors, family archives, and genealogical tables, the latter giving the name to the room. The ceiling of this room is decorated with copies of mosaics found in the Villa of Diomed. They suggest a collection of orchids. The cabinets are supplied with facsimiles of ancient papyrus manuscripts and rolls of Latin, simulating accurately the books of the Pompeians. The busts are in part to illustrate kindred, and therefore are not all contemporaneous.

It will be seen from the paintings found in Pompeii that draperies were used, both at doors and windows, although no textiles survived the destruction, even in carbonization.

No. 10. The *Fauces* (the jaws), a narrow passage which obviated passing through the tablinum to inner apartments. The principal of these is:

No. 11. The *Peristylium*, a court or hall still larger than the atrium, with fourteen columns inclosing a space called the *Viridarium*. Above was another opening admitting air and light. Here were given private entertainments, when the colonnade was festooned with garlands of roses and was gay with birds of gorgeous plumage. Here beneath subdued lights moved those stately Roman men and women, in flowing robes, while music from flute and lyre stole upon the ear from slaves concealed above. It is here that Sir Bulwer Lytton depicts the meetings of the beautiful Ione with Glaucus and Arbaces in the "Last Days of Pompeii."

The ceiling of the *Peristyle* is copied from the Baths of Titus. Few ceilings escaped destruction in the falling of burning rafters during the catastrophe. The garden of the peristylium is upon the plan of the House of Vettius. A picture of the latter hangs upon one of the columns, the capitals of which are modeled after the original. Generally the columns of Pompeii are of brick and concrete painted in party colors. The Vettian marble columns are a rare and rich exception.

No. 12. The *Exedra*, or conversation room, is supposed to supply the place of the modern drawing-room, though the peristyle rivaled it in attractions. Here, however, were placed some of the choicest of the adornments of a rich Pompeian house. These are illustrated by a copy of one of the most superb vases of antiquity, found on the site of the Villa Antoninus Pius, and a cast of "Europa and the Bull."

The bas-relief and engraving upon the east wall remarkably illustrate the force of the caption to this handbook quoted from Lagreze. They represent the visit of Bacchus to Icarius — revealing that the Romans reclined, in social converse, on couches large enough for several persons, and that Icarius did not rise in homage to the heaven-born son of Jove.

No. 13. A *Cubiculum*. In a room situated like this was found the skeleton of a woman with costly and exquisite jewelry which she had evidently collected for her escape; prevented by the overpowering ashes and sulphurous gases filling the air. Her finger bone, encircled with rings found on it, is still preserved in the Naples Museum.

No. 14. A *Cubiculum*, in richest decoration on black ground.

No. 15. *Balneum*, or bathroom. All Pompeians used the great public baths; private ones were limited, as only for emergency. The wall of this room is from the unique decoration of the bathroom in Diomede's villa — a representation of deep-sea water, with fishes — and pomegranate trees on the side walls in full bearing. The marble tub is below the level of the floor, like a tank, as was the custom, and the ceiling represents an open sky, with birds, dragon flies, etc.

No. 16. The winter *Triclinium* (dining room), named from the couches surrounding the table, as Romans always reclined during meals. The size of the couch was in accordance with the rule that the number at dinner should never be less than the Graces (three), or more than the Muses (nine), excepting, of course, in large banquets. Grand houses had two triclinia, for winter or summer use, but the ancients were much addicted to the pleasures of the table, and called frequently into requisition the *Œcus*, or large hall. At such times the floor was strewn thickly

with sawdust stained in bright colors, and at one end of the hall slaves danced during the meal. A silver hoop suspended above the table held chaplets of flowers, or even of silver, for distribution among the guests.

No. 17. Summer *Triclinium*. Here in the summer the Pompeian families took their meals, beneath the shade of trellised grapevines as screen from sun rays. Flowers lined the walls, on which were paneled pictures making vistas — loopholes for the imagination to range beyond the narrow inclosure. The dining couch is an exact reproduction of one remaining in Pompeii, and at its precise distance from the garden walls. The panels are painted in oil from originals in Herculaneum.

No. 18. The *Lararium*, or household temple. It was here that the family propitiated their "Lares and Penates" with flowers, fruits and the blood of animals.

No. 19. The *Œcus*, or large hall, was an innovation borrowed by Pompeians from the Greeks. It was used for a banquet hall. The proportions were so regulated as to accommodate two triclinia, their respective couches facing each other, with space for servants to pass between and around them.

No. 22. *Pinacotheca* (picture room) contains oil paintings by Pascal (above alluded to) and Zurcher. Those now on exhibition are: Vesuvius before the great eruption, and Pompeii with an ancient galley, copied from a picture in Herculaneum; Vesuvius during eruption; the Forum in Pompeii as exhumed, after photographs by Pascal upon the spot; a sacrifice in the Forum.

Then, as before stated, there are other and less important rooms upon the intermediate floors, and a *Solarium*, or roof garden, over the annex. In this annex is also Mr. Smith's studio, where one can fairly revel in works of antiquity, the finest engravings, casts, bits of ancient draperies, studies of color schemes, a room whose very accumulation of dust and whose apparent disorder tells of the artist who "seeks results, whose master hand scorns pettiness and — never dusts!"

In concluding this sketch of the most elaborate reproduction of a Roman house of the first century of the Christian era as yet attempted, it may not be presuming to suggest that therein is a field for instruction, far beyond novelty and entertainment. Students of history may here find dry descriptions illuminated by color and object. With an entirety of the surroundings in Roman domestic life, painted by the eye upon the retina of the brain, the lives of Plutarch and other classics will take more vivid interest.

SOME PRINCIPLES OF FORM-DESIGN IN APPLIED ART.*

BY HUGH STANNUS, F.R.I.B.A.

THE mass-shape or mass-form of objects is governed by a group of laws, of which the law of accentuation is one extreme and the law of mollification is the other. (The intermediate law in regard to the shape or form is the law of decision, and that in regard to surface is the law of breadth.) Thus, in regard to the shape of the quadrate figures, in Fig. 38, the central sketch, marked D, is the normal or intermediate shape; the right-hand sketch, A, is accentuate; and the left-hand sketch, M, shows the angles as softened or mollified. So, also, in regard to the form of the object (a gable) in Fig. 39, the central sketch, marked D, is the normal or intermediate form; the right-hand sketch, A, is accentuate; and the left-hand sketch, M, shows the corner as mollified. In regard to surface, *vid. seq.* the law of breadth.

FIG. 38.

FIG. 39.

Accentuation is the first of the group of laws which govern the design of mass. The term is derived from two Latin words which signify the singing (some parts of a melody) with more energy (than the remainder). The first note of each bar is usually thus marked (for time-measuring reasons) †; but other notes are also sounded with energy, for expression as a part of the design of the tone-artist. So, also, in other applied arts — when one sentence or word is enunciated with more energy than the remainder of the oration — one feature or detail is marked with more energy in projection, in mass-shape beyond the general mass of the object, or in relief in front of the general surface of the ground, or in color stronger than the general tint or tone — then it is said to be "accentuated."

Examples are seen: In nature — in the eyebrows and lips for color; and in the mustache, beard, mane and tail for form; in dress—in the cocked hat with its turned-up or "cocked" brim, the curved brim of the ordinary high hat, and the epaulettes; in architecture — in the gablet at the top of the hipped roof (sketch A in Fig. 39), the akroters on the pediment (Fig. 11), the anta or thickening of the wall end in a Greek temple, the projecting horns of the Corinthian abakos (sketch K in Fig. 6), the cornice at the wall top (Figs. 27 and 28); the arris between each two flutes of the Dorian column shaft (but see last paragraph of Functionality in Lecture I); the quirking and cusping of Greek moldings; and the hood-mold in the decorated period, in profiling, etc.; in the late Greek sepulchral vase, two of which, from the Central Museum at Athens, are shown in the first two sketches of Fig. 40 (these err against the law of materiality by reason of the projecting lips and bases and the thin handles, which would be broken in daily use; they were, however, not for use, but were made cheaply in clay, to be placed as symbols upon the tombs); the Greek bedstead leg, shown in the third sketch of Fig. 40, exhibits accentuation in a very marked degree in the (unnecessary) projection of the fillets; the tassel at the extremity of the cord; and the ceriphs in typography.

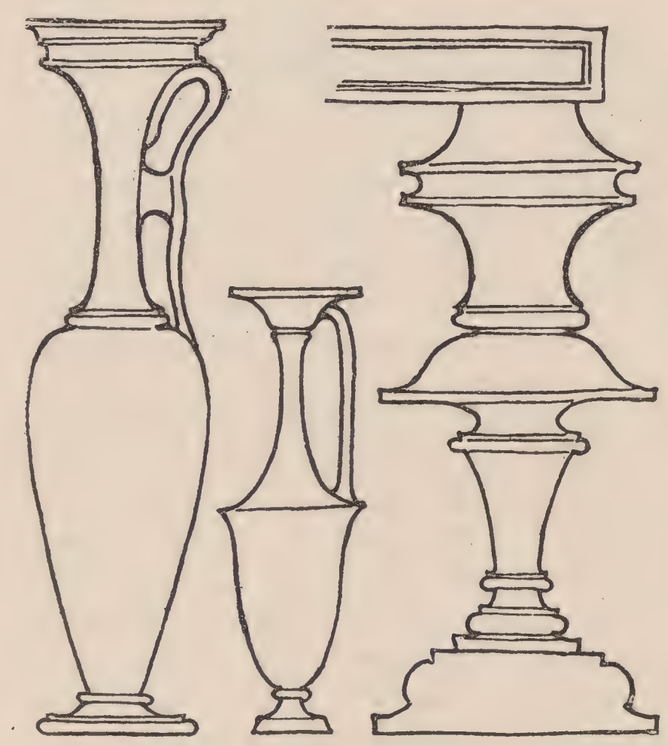


FIG. 40.

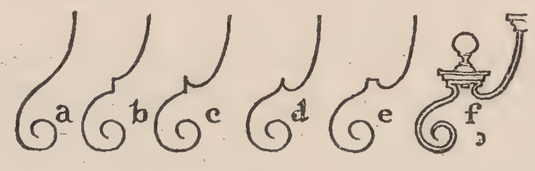


FIG. 41.

Increase of accentuation will be seen on comparing the sketches in Fig. 41. In a is seen a spiral with an obcurved end (somewhat similar to a lituus); in b the two parts are separated by the interpolated vertical straight line; in c the upper part is more curved, and makes a tangent with the straight line; in d the lower part is made to curve out, making a tangent with the upper; in e the two tangential parts are separated by the interpolated horizontal straight line; in f the two parts are still more curved, making tangents with the horizontal line. Thus b may be said to be normal; c is accentuated; d is more accentuated, with one center of radiation; and f is an extreme case, with two centers of radiation. The violin body, as finally settled in its present canonical shape, shows accentuation. The rib had been originally of one piece of wood, curving inward to enable the bow to touch the strings, and so obviating the other alternative, i. e., the high bridge; but the seventeenth century was a time of accentuation in art; the violin did not escape its influence, and the rib was made in

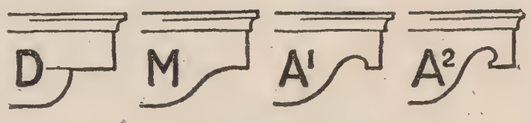


FIG. 42.

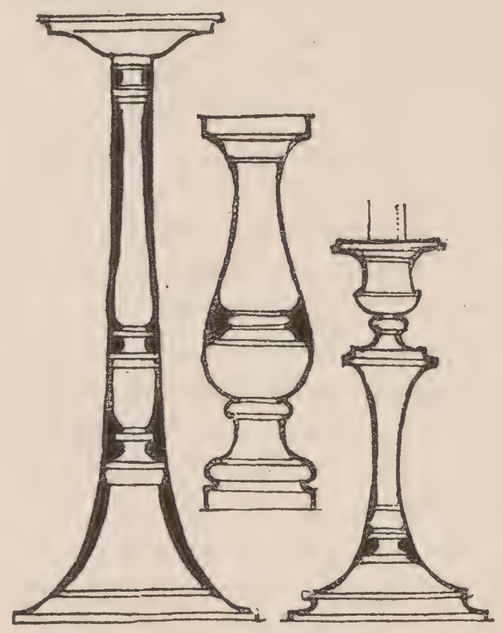


FIG. 44.

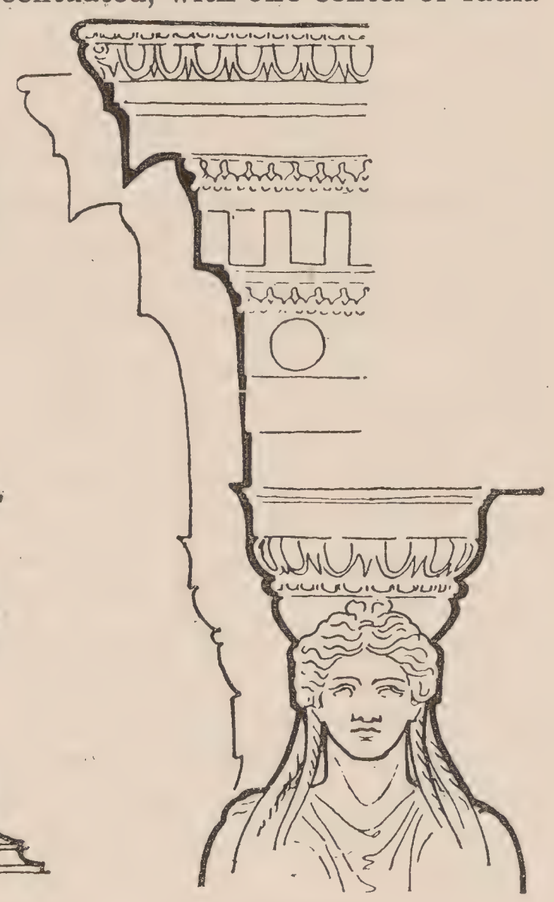


FIG. 43.

*Lectures delivered February 14, 21, 28 and March 7, 1898, before the Society of Arts, London, England. Commenced in December, 1898, number.

† The time-measuring accentuation is analogous to the law of repetition, and will be treated of under that head.

five pieces with two cusps on each side. In Fig. 42 are shown some sketches for bracket sides. The first one, D, shows the projection obtained by the convex quadrant and the square; in M these are coalesced, making a cyma-recta shape; in A1 the upper portion of (hollow) shape is more curved, making a tangent to the vertical face, this being the first stage of accentuation; and in A2 the upper portion is still more curved, making a tangent to the horizontal soffit, thus being a second stage of accentuation. In the right-hand sketch A of Fig. 38 three degrees (numbered) are further shown.

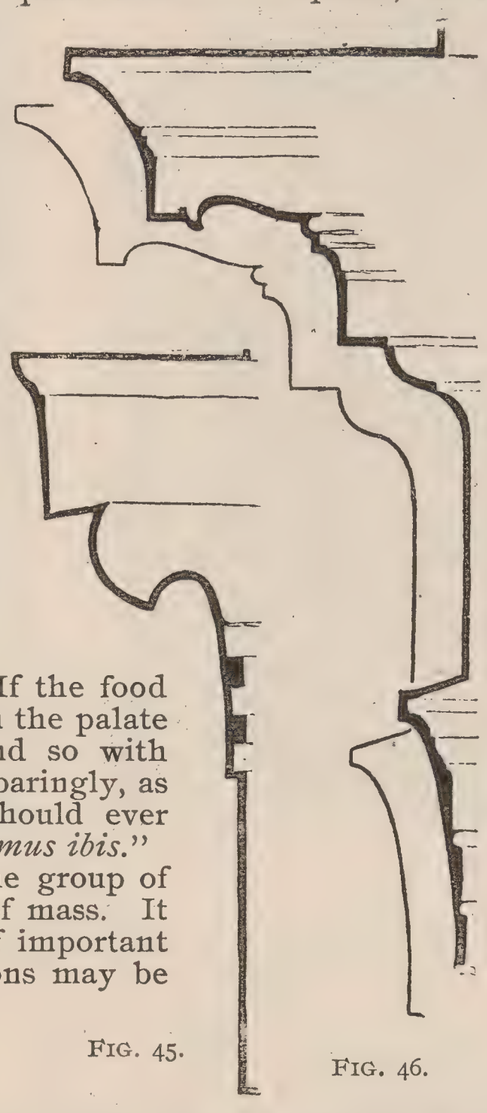


FIG. 45.

FIG. 46.

The application of this law (of expressive accentuation) is an expedient for preserving the attention of the listener or beholder; but it should not be too often applied lest it defeat its own end. It is like the "seasoning" in gastronomy. If the food were all pepper or mustard, then the palate would soon lose all relish; and so with accentuation; it must be used sparingly, as a seasoning, and the student should ever remember that "*In medio tutissimus ibis.*"

Breadth is the second of the group of laws which govern the design of mass. It prescribes that, though details of important features or in important positions may be prominent for good and sufficient reasons, yet the general surface shall be treated in such a manner that it be not frittered away or cut up into too many small parts that would militate against each other and destroy the simplicity and unity of effect which should characterize every good composition. Hence, it is in some degree antithetical to accentuation, though it may be applied and coexist in the same object, as shown in Fig. 43 (the architrave cornice of the Pandroseion), in which the dripping edge of the corona shows accentuation; and the architrave fascias with the ogee and the dentil soffits show breadth.

FIG. 47.

Examples are seen: In nature — in the continuous line of the mountain sierra; the circumscribing line of trees, flowers and leaves, of feathers, wings, fins, paws and hands, and in the bodies of all animals in which, though muscles of different function combine to make the form, yet the skin covering blends all into undulating forms of infinite and indescribable changeful beauty; in architecture—in the dignified simplicity of surface of the Strozzi Palace, in Firenze, as compared with the trifling littleness of the Hotel de Ville, at Paris; or in the palace front of Fig. 28, as compared with the church flank of Fig. 9; in profiling in the three sketches of Fig. 44, in which the general mass form is as shown by the black line, while the individual moldings are kept within that boundary, approaching and receding, but never transgressing the appointed limit; and never deviating so far as to reduce unduly the sectional area (contrast these sketches with the bedstead leg of Fig. 40, and the effect of a broad treatment as compared with that of an unduly accentuated one will be observed); in Fig. 45 (the anta capital of the Propulaia, at Athens), in which the three fillets are designed to oversail in such a manner

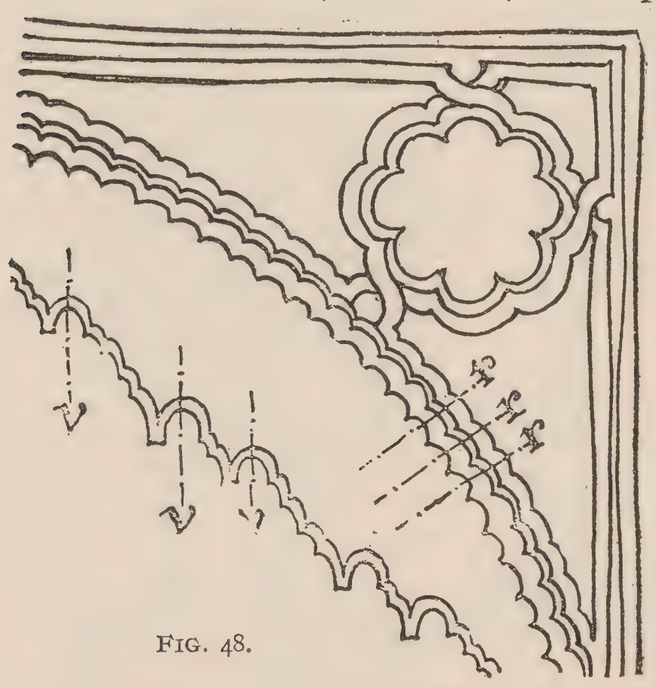


FIG. 48.

that they are tangential to the curve of the under surface of the "hawk's-beak" molding, which curve (if produced) would be tangent to the lower fascia also; in 43 (the architrave cornice of the Pandroseion), in which the moldings are so designed that they coalesce into groups, as shown by the black line that is applied to the cornice, and also in the adjacent thin line (this, one of the most beautiful cornices in the world, is a very compendium of Greek art in subtle profiling); and in Fig. 46 (the entablature of the Wellington monument), in which the moldings are similarly designed in groups, shown as before, and in which Alfred Stevens, the master, has shown himself (as in other branches of the art one and indivisible) not an unworthy disciple of the Greeks.

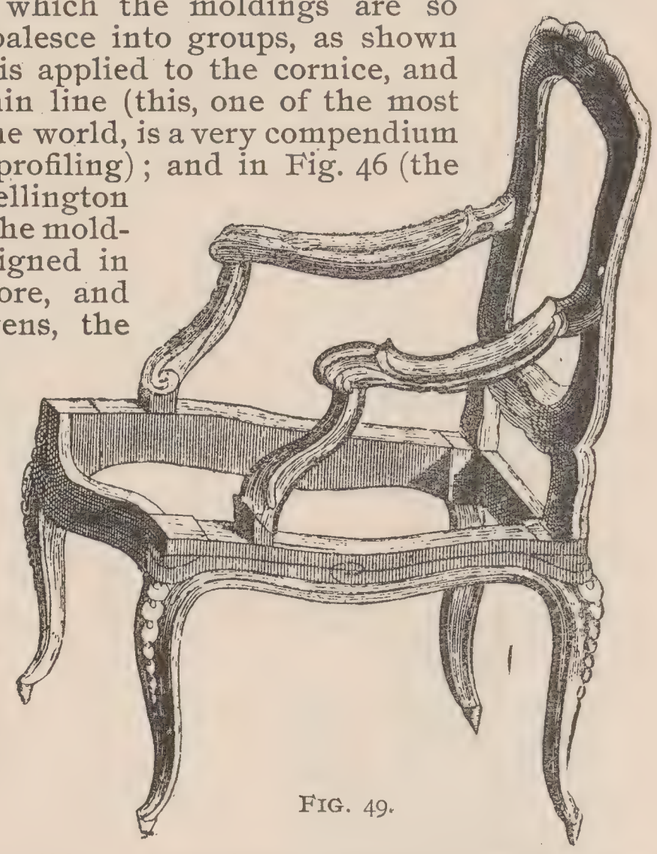


FIG. 49.

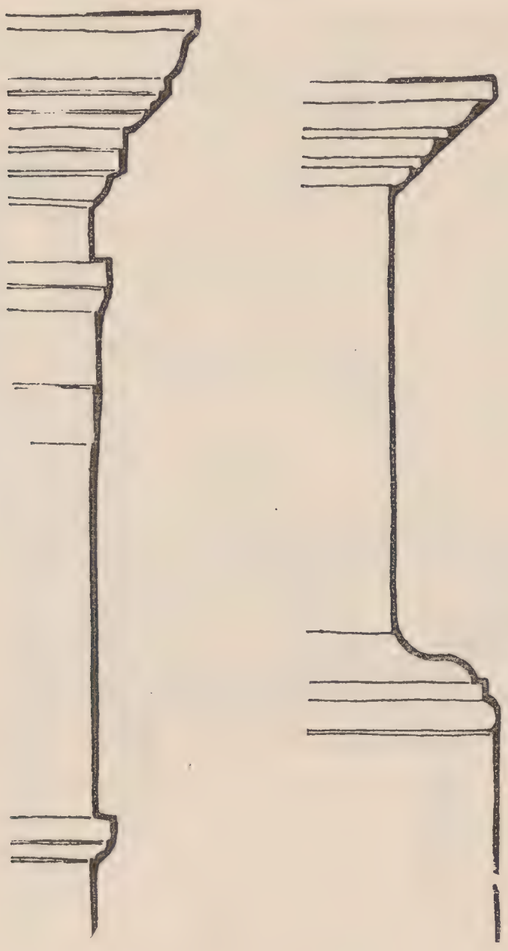
The application of this law is universal; and every object, or set of objects, that has come under its governance, is thereby made more dignified and more worthy of the art, divine and human, that renders the surroundings of our life so beautiful. Disregard of this law may arise from two sources — a plenum and a vacuum; the student may have *too much* detail which he desires to "work in" — in which case he needs judgment, i.e., principles; or he may not have enough, in which case he needs observation, i.e., study of the works of both kinds of art that surround him.

FIG. 50.

Mollification is the third of the group of laws which govern the design of mass. The term is derived from two Latin words which signify the rendering soft of any object. It is further extended from association of idea to include the rendering of angles and corners round or blunt; and the breaking up of the edges into a multiplicity of minute shapes, which thus obviates the hard effect of a straight line. The left-hand sketches, M, in Figs. 38 and 39, show this extended meaning.

Examples are seen: In nature — in every fish that swiftly cleaves the water, and most other animals and plants; in dress — in the lace-edgings that soften the hard line of the collar or sleeve against the neck and wrist, the fringe that softens the hard edge of the mantle, and the necklace (Fig. 47) that marks the modulation from the neck to the thorax; in architecture — in softening the hard cornice line along the flank of Greek temples, also of the arch openings, by the Mahometans, as shown in Fig. 48 (two arch openings from the Alhambra, in one of which, r, the cuspings are radial, and in the other, v, they are vertical); in furniture, etc. — in the wooden chair (Fig. 49), and the metal candle-bracket (Fig. 50), in which the aim of the artists appears to have been to soften or "mollify" all straight lines and corners into curves (some of these softenings are necessary under the law of functionality, but others are designed in this manner for æsthetic effect only, without any reason, and the observer will further perceive that the design of the chair disregards the law of materiality in a marked degree); the mirror frame (Fig. 51), in which the outer edge is softened against the wall; the Italian mirror frames, of the sixteenth century and onward, show the desire for softening the edges, by the addition of brackets underneath, caryatids at the sides, and pediment-shaped crestings at the top; in profiling—in the left-hand sketch of Fig. 52, which shows too much mollification, each portion of the cup being composed of three curves (convex, concave and convex), joining at the points marked b and c, hence there is

FIG. 51.



Figs. 57 and 58.

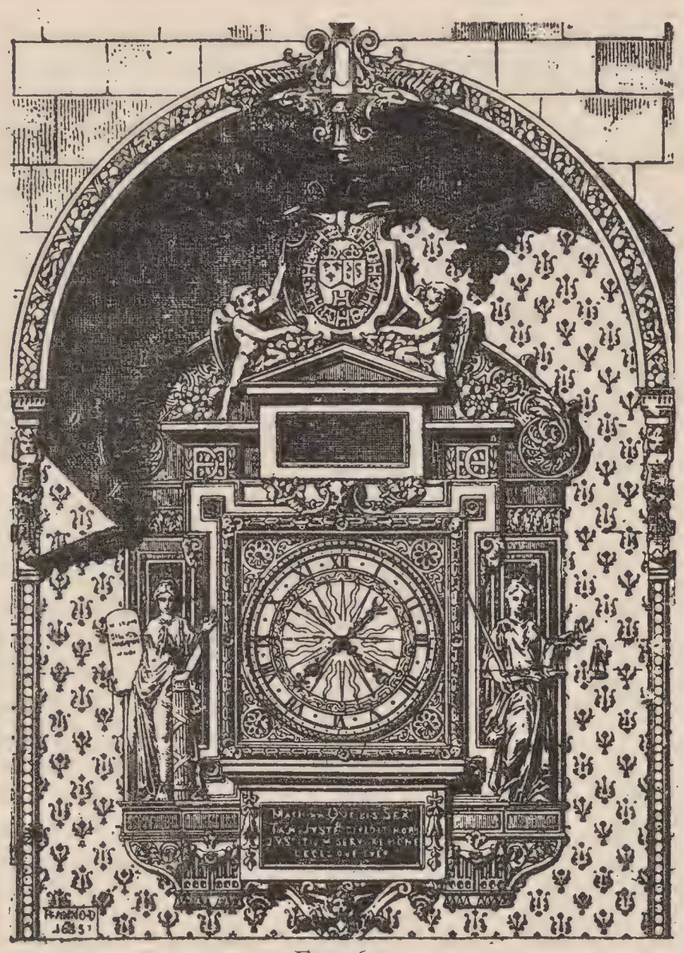


Fig. 62.

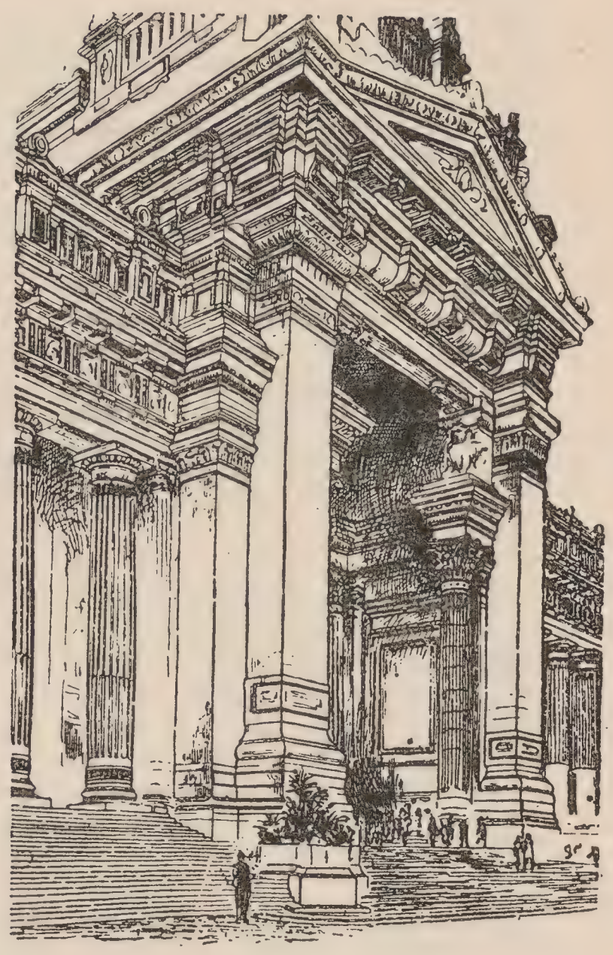


Fig. 66.

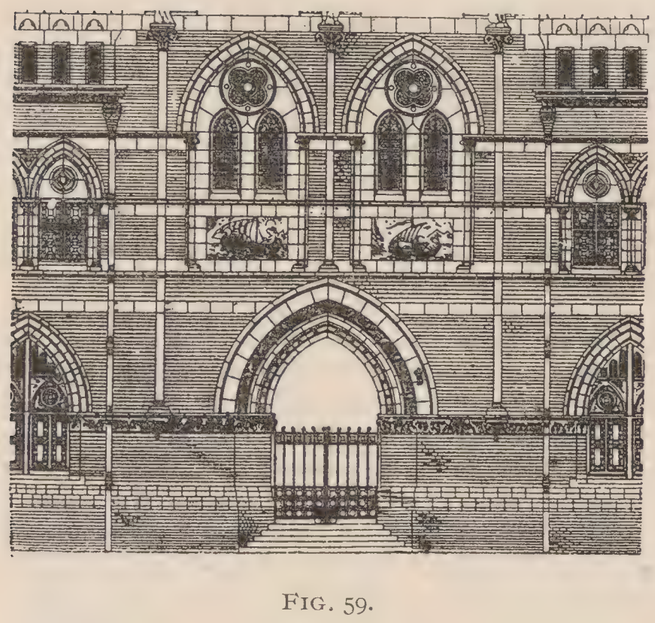


Fig. 59.

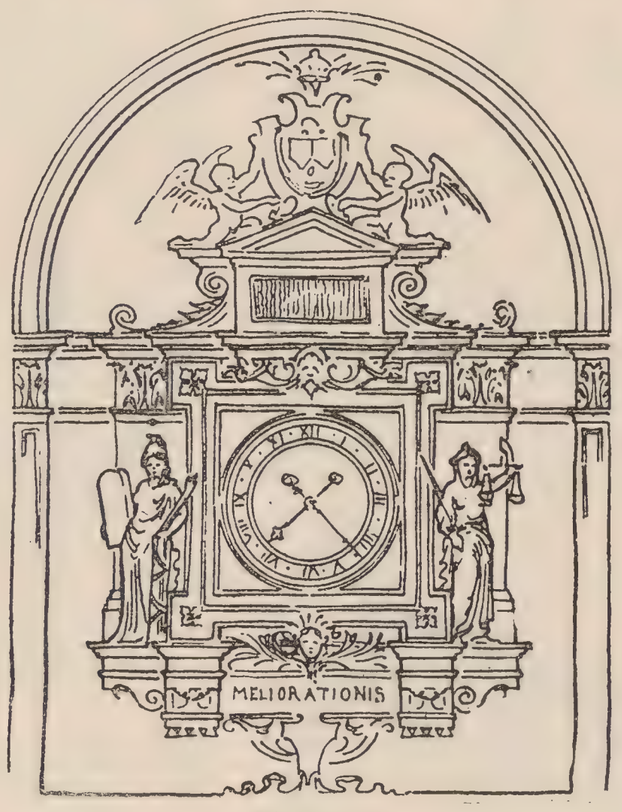


Fig. 63.

Fig. 68.

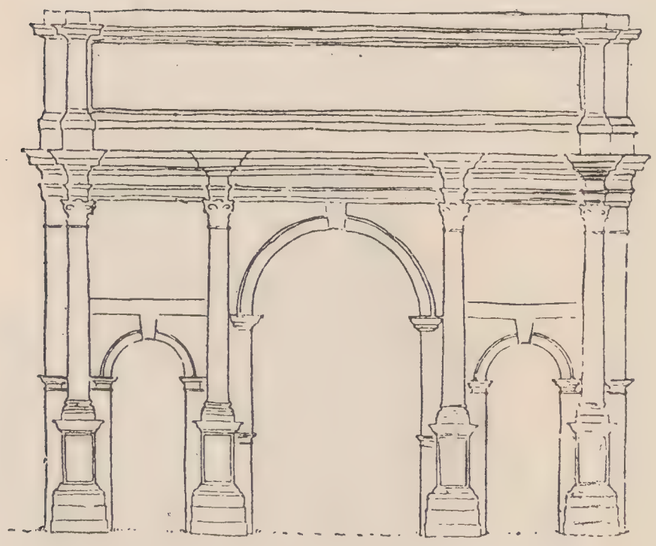


Fig. 60.

Fig. 64.

Fig. 69.

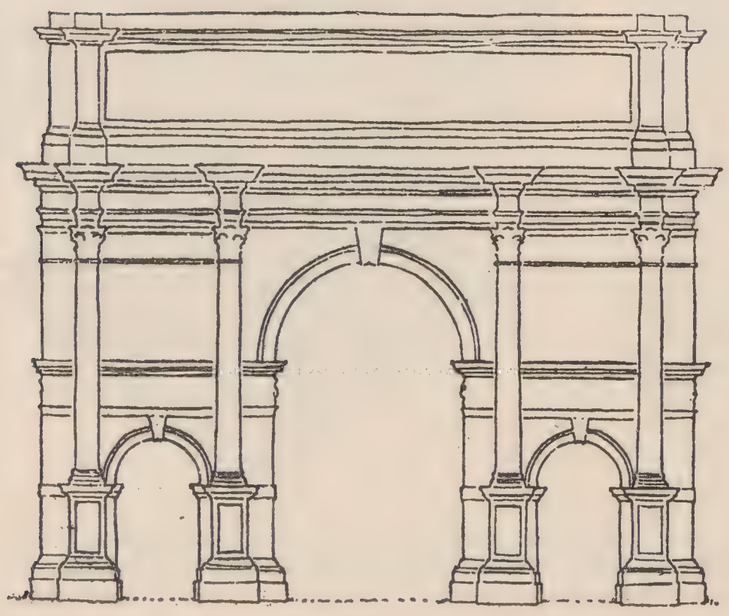


Fig. 61.

Fig. 65.

a want of decision about the profile, which is corrected by the interpolation of the molding B (between the pause and the frieze) or C (between the frieze and the lip), and also in the stem and

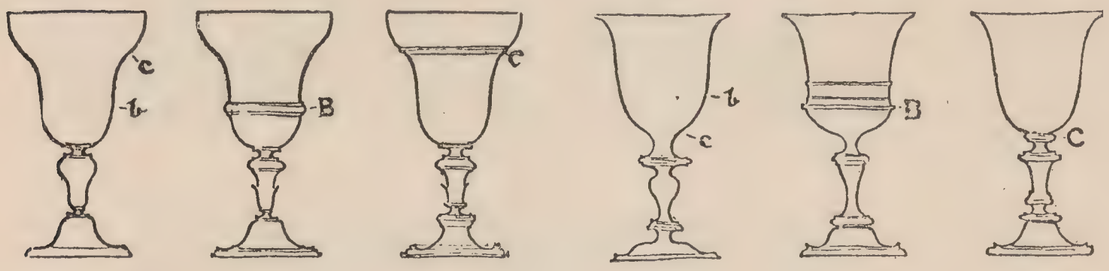


FIG. 52. FIG. 53.

base; the left-hand sketch of Fig. 53 has similar faults (concave, convex and concave, all coalescent) which are corrected by interpolated moldings, as before; in moldings—the student will observe that the sketches in Fig. 54 are moldings of *one* curve, those of Fig. 55 are of *two* curves, joining at the points marked by a dot, and those of Fig. 56 are of *three* curves, similarly marked.

An abuse of mollification is shown in Figs. 52, 53 and 56. The single curvature of moldings is always strong and manly; the double curvature is refined and elegant; the triple curvature is always a sign of decadence in any style, leading to a want of decision of profile and of clearness in design; and it should be avoided except for moldings around openings (where the profile is not seen) by every student until he has mastered the art of profiling, when, of course, he becomes a law unto himself.

FIG. 54.

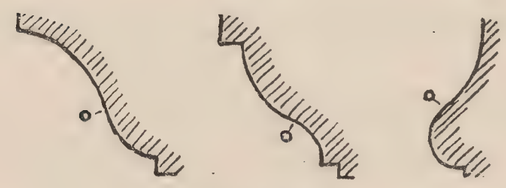


FIG. 55.

FIG. 56.

Decision is the fourth and last of the group of laws which govern the design of mass. The term is derived from two Latin words which signify the being *cut-off* (in a *determined* manner, without any softening of corners). The idea of *rectangularity* is now included in its application to form; thus in Fig. 38, the square D, and in Fig. 39, the gable end D, show decision. It is opposed to all undulating shapes; and is antithetical to mollification.

Examples are seen: in nature—in the craggy rocks and other results of geologic upheaval; in architecture—in the rectangular forms of the Dorian order and the mass form of the dentil course shown in the two sketches of Figs. 43 and 46.

Disregard of this law is seen in Fig. 57 (the cornice of the Temple of the Winds, at Athens, B. C. circa 80), and in Fig. 58 (the podium of the monument to Philopappos, at Athens, A. D. 114), both built after the decline of Greek art. Compare either with Figs. 43 and 46.

The application of these four laws, each to its own proper parts in the composition, requires much experience and skill; but the result will be worthy of the thought bestowed on it.

Unitedness is the law, governing the corelation of different portions of the same object, which prescribes that—(a) if these different parts are arranged *horizontally* with regard to each other, i. e., in rank, then some features, e.g., moldings, shall be carried through all for the purpose of (apparently) binding them together; and (b) if they are arranged *vertically*, i.e., in file, then some feature shall be carried through across the horizontal divisions, for the same purpose; and further, that, though the separate parts might be each right in itself, yet each should appear incomplete by itself, and only attain perfection when in full combination and communion with all of its coefficients. Without the influence of this law, objects appear like parts of different things placed fortuitously, in what may be termed "the lob-worm" style of design.

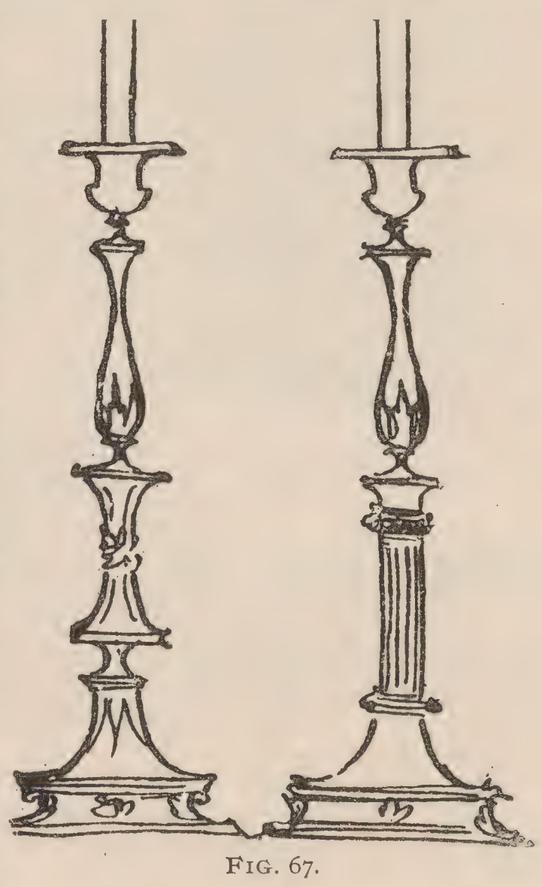
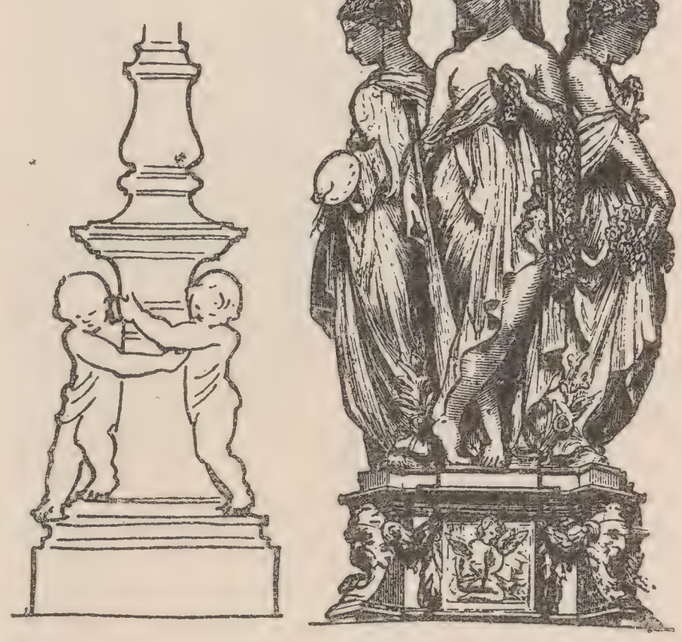


FIG. 67.

Examples are seen: In nature—in all things, except such as are the result of convulsion and its consequent dislocation; in architecture—in the Figs. 8, 9, 27, etc., in which the cornices, string courses and plinths bind (in appearance) the separate parts or bays together. Professor Aitchison, R.A., has pointed out a similar effect, produced by the arcade, which joins together the two western towers of Notre Dame at Paris, in France, and by the overlapping of the lower colonnade in the front of St. Paul's Cathedral, in London; the portion of the beautiful design, by the late Edward W. Godwin (Fig. 59), also admirably exemplifies the influence of this law.

Disregard of this law is seen in the arch of Septimus Severus at Rome (Fig. 60), in which no single molding (below the capitals) is carried through, with the result that the lower portion appears to have belonged to different buildings, which are here put together. This disregard is obviated in Fig. 61. Also, in Fig. 62 (the clock on the Palais de Justice, at Paris) there is not a single molding that gives any feeling of unitedness in the design; but the whole appears to be "made up" of incongruous parts, somewhat after the traditional Wardour street recipe. This disregard is obviated in Fig. 63. Again, in Fig. 64 (the Church of S. Giorgio, at Venezia) only the plinth is carried through, and the aisles appear like an afterthought. This disregard is obviated in Fig. 65 (which is not much like a church, but neither is the other). And in Fig. 66 is shown a portion of the Palais de Justice, at Brûxelles. Here the absence of unitedness is painfully apparent; there are no binding lines, and at the internal angles, where the wing abuts against the center portico, there is a hiatus like a fault in geological strata. In fact, the huge structure, though with much refined detail and erected with all the experience of the last quarter of this century, is like a Mexican or Indian building in character through this disregard.



FIGS. 70 AND 71.

Reticence is one of the group of laws that govern the amount of detail applied to any object. The term is derived from two Latin words which signify the *keeping silent*. There is a "chattering" in design when the artist applies too much frivolous detail, and there is "reticence" when he has learned to "hold his tongue," i. e., to introduce no detail that is not required. This, as in our life, is one of the most difficult laws to obey. The spendthrift is generally foolishly considered to be a more amiable person than the miser, and profusion of detail (as analogous to generosity) is more liked than dignified reticence; but most observant minds will assess each at its proper value.

The application of this law governs the amount of (a) detail, (b) curvature, etc.

Examples of reticence in curvature are seen: In Fig. 67, showing two sketches for a tall candlestick, of which the left-hand one is entirely composed of curved profiles, while the right-hand one shows a portion that is *vertical* without curvature, which, it will be perceived, gives (by contrast) more value to the baluster profile above it; so also, in Fig. 68, the font is unpleasing by reason of the turgidity of the masses; and Fig. 69 shows an attempt to render it more "quiet," i. e., more reticent.

Figures and animals are sometimes added to enrich the profile, as shown in Figs. 70 and 71. When the central feature to which they are applied is clearly seen and they do not supplant it, then they are a pleasing addition, as in Fig. 14.

TWELFTH ANNUAL EXHIBITION CHICAGO ARCHITECTURAL CLUB.

THE twelfth annual exhibition presented by the Chicago Architectural Club, including about six hundred exhibits, was opened in the galleries of the Art Institute on March 30, and will continue until April 28. It is the largest, best arranged and most comprehensive exhibition yet held by this club, and, as a whole, is immensely creditable to the club, and particularly to the committees that had the work of collecting, classifying and selecting in charge. Of the exhibition Mr. Lorado Taft, the sculptor, in a breezy comment in a local paper, says (and his description will give a better idea of the *ensemble* than any amount of particularizing):

"Nobody expects an architects' exhibition to draw a crowd, but there are thousands of people in Chicago cultivated enough and possessing taste enough to enjoy this exhibit. One writer rejoices that there are so few plans; the architects mourn that there are not enough of them. As one of the brightest of the craft explained to me, they like to know the reason of things, and a plan is a guarantee of good faith. 'A picturesque façade is nothing but stage scenery unless its features stand for something.' I think I catch the idea. Some people wear impressive bumps on their foreheads, you know, which look amazingly intellectual, but

often these represent nothing at all, and then the stage effect is disappointing. If the imposing dome were only accompanied by a cross-section of the brain we might not be fooled so often.

"Some of those grandiose 'projets' from the various great architectural schools of our country will interest even a layman, and I am sure that the humble blue print will hold your attention for a moment, at least, when it pictures the consummate ingenuity with which a battleship is planned or the wonder of a seven-story house on wings. But you and I will take greater comfort in the large hall where are grouped with unusual taste the works in color. I believe I am not exaggerating when I say that the general effect of that hall has never been finer, even when decked with the best paintings that come to us. The color scheme is very pleasing, and those long-arched decorative panels of Mr. Newton Wells serve an admirable purpose in binding each group together instead of leaving them in the usual fashion to fray out into obscurity or to tear the skyline.

"I feel a special interest in these decorations for the library of our State University, and I am glad that they are so good. Mr. Wells, who is unknown to me, has appreciated his opportunity, and these works will repay him many times in the esteem of his brother artists. I fancy that, like Castaigne, in his first illustration for the *Century*, he has spent all he gets for models. It is a good investment. 'Arcadia' is delightful. There is a charm in the color sketch which marks the young designer as a real decorative artist. I am impatient to see the finished work and to congratulate my alma mater.

"The ten water colors, by Cass Gilbert, of St. Paul, give great pleasure. I covet them, and so would you if you saw them. It seems unreasonable to believe that there are things in the world so exquisite as that glimpse of Nuremberg, and, indeed, every one of these artistic joys.

"There are many more Old World sketches and studies from various hands, charming in color and directness of rendering, and some home designs which are simply stunning in treatment—like those of Wilson Eyre, Hughson Hawley, and the astonishing sketch of an invisible cottage, by Katherine Budd, of New York. These and 'St. Faban's Castle' are so different from the customary architect's drawing that one gasps a little, but returns to them with great satisfaction.

"I am bound to like the doings of Pond & Pond, and am lost in admiration for the able way in which they have pulled the original nucleus of Hull House into shape. They have converted an ugly building into a thing of beauty. The various additions have a style all their own, which is not the artist's whim, however, but the logical development of an idea. Hull House is doing good in more ways than one.

"There are some other fanciful decorations there which are 'cute and cunning.' I recall with particular pleasure the colored frieze for a child's room, by Mrs. L. F. Perkins. It illustrates 'Mother Goose,' or some other classic dear to babyhood, and would be good company for the little ones, waking or sleeping."

In a hasty first-night view a detailed description of every good thing in the exhibition is hardly possible, for the eye is attracted from L. V. Boyd's excellent house at Germantown to an Egyptian pipe rack and smoking set by Charles H. Barr, and half an hour is consumed in the delight of the Penell and Harry Fenn drawings exhibited by the Century Company.

The drawings entered in a recent "Terra Cotta Column" Club competition, particularly that by Birch B. Long, entered by the Chicago Club, has a charm all its own, and the plans and designs of the University of Pennsylvania Law School, by Cope & Stewardson, call for more than casual inspection. Frank Miles Day's work, particularly the dining room for Mr. Van Rensselaer, is, like all his work, notable. Likewise is that of Wilson Eyre, especially his house for Ernest Albert. The friends of Mr. Albert certainly congratulate him as well as his architect.

Ernest Flagg presents a group of ten drawings, his "Botannical Garden" and the studies for a cathedral being about the best in the lot.

Mr. Taft does not overpraise the delicacy and richness of Cass Gilbert's drawings and as one goes through the galleries one is asked a dozen times, "Have you seen that cottage sketch by Catherine Budd?"

Restful after lines and color and mass is the superb exhibit of vases by the Grueby Faïence Company, and each of the twenty exhibits has its own particular attraction. Among the exhibits by Western architects a church by William A. Otis is deserving of praise, and is probably the best rendition of the church problem in the exhibition, and the same might be said of some of the residence work of Wilson & Marshall and R. H. Robertson's elevation of a country house.

The medal drawings of a crematory, by Theodore Wells Pietsch, are a decided addition to the collection of drawings in this section, and the decorative work of Mrs. L. F. Perkins, though Mother Goose in motif and grotesque in design, show a powerful insight into character and the ability to draw as well as a more than general knowledge of decorative effects. They are not as good as some of Kenyon Cox's work, but as good as any he has done in that line. The dreamy effect of light and shade in R. C. Spencer, Jr.'s, drawing for a memorial library was most beautiful and held the attention of many.

A special description should be given, if space would permit, to the decorative studies of Newton A. Wells. One or two of his exhibits would bear comparison with some of the best decorative work in the National library. The exhibit sent by James Knox Taylor from the Supervising Architect's office is an important addition, and the space given to the exhibit of naval architecture from the Bureau of Construction and Repair suggests how closely the planning of houses upon water and upon land is related.

A large amount of space is given to academic work, and possibly, as the exhibition is by draftsmen, it is not out of place, but one could wish that the line could be drawn at competition drawings, if the exhibit must go beyond those of executed work, for in one way they mar the general effect.

PAINTS IN ARCHITECTURE.—III.

THE DISINTEGRATION OF PAINTS.

WHEN a paint begins to lose its gloss, disintegration has begun, and its actual separation from the painted surface will not be long delayed. The ideally perfect paint would never come off, and in proportion as paints fulfill this condition do they approach perfection. Pure lampblack in oil appears to be an almost perfect paint, being removed only by the wear of the elements; some of the earth paints are nearly as durable.

The causes of disintegration are chiefly lack of oil, chemical action of the pigment on the oil, and secondarily, the attrition of dust on the surface roughened by chalking. White lead is strongly characterized by these defects. It carries a comparatively small proportion of oil, and being a strong natural dryer (oxidizer) destroys a portion of that, while another portion is converted by the caustic oxide it contains (hydrated lead oxide) into a brittle soap. The consequence is that a coating of pure lead quickly loses its gloss, and very soon begins to disintegrate ("chalk off"). The destruction of a lead coating is further hastened by the conversion of a portion of the lead into the black sulphide, and by the roughening of the surface, which invites the lodgment of dust and promotes the sand-blast effect of the latter.

These defects can be remedied to a great extent by adding pigments to dilute the lead and to increase its oil-carrying capacity. The oldest (and cheapest) diluent is barytes, but this does not increase the oil-carrying capacity in the least. The most satisfactory remedial agent is zinc white, which not only dilutes the lead, but greatly exceeds it in oil-carrying power, and consisting of relatively very minute particles, appears to coat the particles of lead, as it were, and greatly diminish their chemical activity.

A combination of lead and zinc in the proportion of half-and-half by weight, or even one-third lead and two-thirds zinc, will have all the working qualities of pure lead, with nearly the durability, in both color and material, of pure zinc. The combination, however, should be effected mechanically by thorough incorporation of the materials in a mill. CHARLES JOURDAIN.

OUR ILLUSTRATIONS.

Amiens, France, "Leaves from an Old Sketch Book," E. Eldon Deane, del.

Baron De Hirsch Trade School, New York City. Freedlander & Dillon, architects.

Residence of Levi P. Morton, New York City. McKim, Mead & White, architects.

Rockefeller Hall, Vassar College, Poughkeepsie, New York. York & Sawyer, architects, New York City.

The Halls of the Ancients, National Galleries Company, Washington, D. C. Franklin W. Smith, architect.

Berzelins Society Hall and Dormitory, New Haven, Connecticut. Brite & Bacon, architects, New York City.

House, No. 45 East Seventy-second Street, New York City. York & Sawyer, architects. The following are shown: View in Dining Room; View in Library; Two views in Drawing-Room.

From the Chicago Architectural Club Catalogue of Exhibition for 1899: Suburban Residence, Oscar Enders, architect; University Hospital, Lake Forest, Illinois, Frost & Granger, architects; Yacht House for George C. Boldt, G. W. & D. Hewitt, architects, Philadelphia; Hospital, Nurses' Home Building, Nettleton & Kahn, architects, Detroit, Michigan; Competitive Design, New York Botanical Garden Museum, Ernest Flagg, architect; Study for a Country Club, William A. Bohnard; School of Architecture, University of Pennsylvania, F. F. Lincoln; Cloister Door, Dryburgh Abbey, W. Campbell, del.; Competitive Design for Schoolhouse Doorway by C. M. Winslow.

Photogravure Plate: Station for Chicago & North-Western Railway, Cedar Rapids, Iowa; Charles S. Frost, architect, Chicago.

PHOTOGRAVURE PLATES.

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Glen View, Illinois, Golf Club. Holabird & Roche, architects. An exterior and interior view are shown.

Station for Burlington & Missouri River Railroad, Omaha, Nebraska. Walker & Kimball, architects. Three exterior views are shown.

Station for Chicago & North-Western Railway, Cedar Rapids, Iowa. Charles S. Frost, architect, Chicago. An exterior and interior view are shown.

THE next meeting of the Board of Examiners of Architects of the State of Illinois will be held at the University of Illinois, at Urbana, on June 20, 21 and 22.

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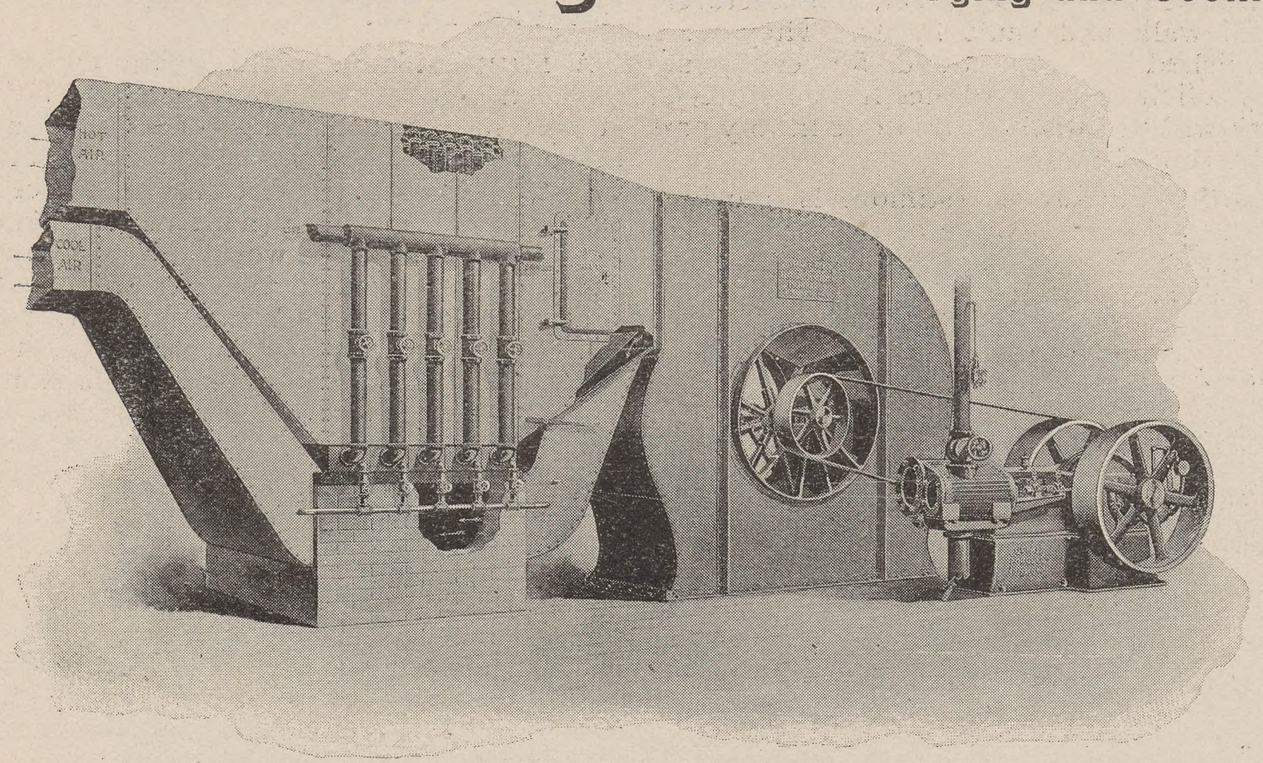

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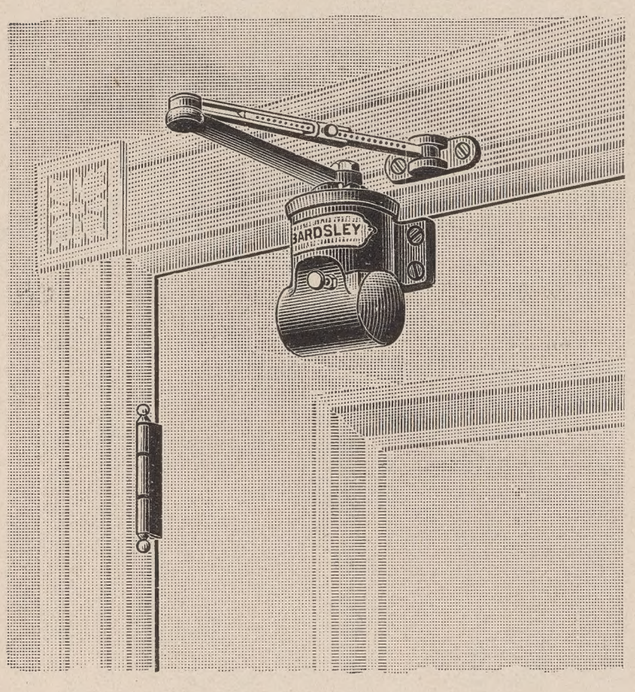

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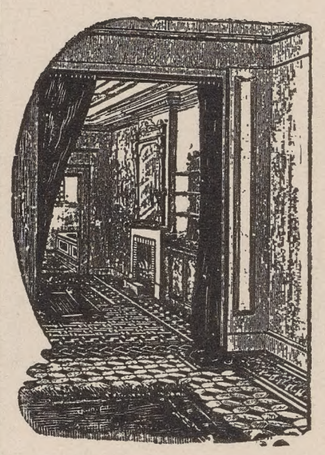

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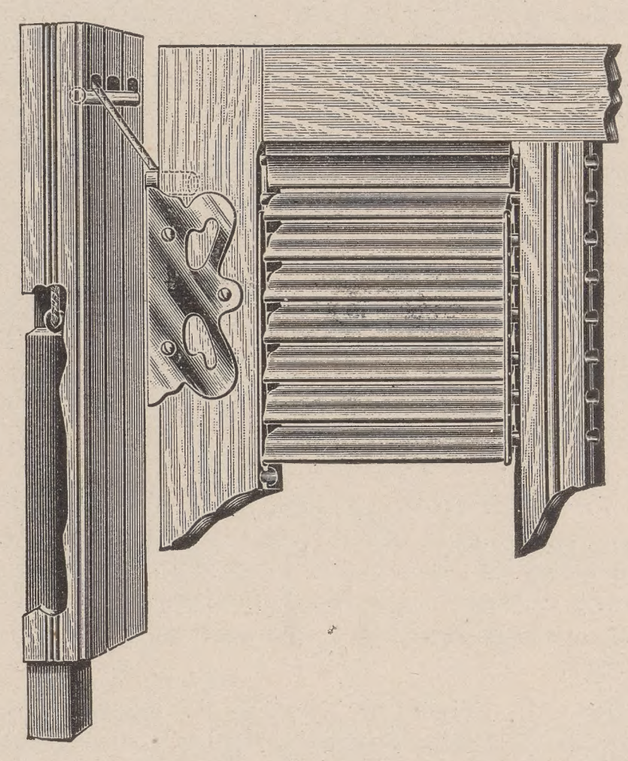

balanced, and are, therefore, more easily operated than those supported by springs, which latter can either be moved only by the full strength of both arms or they get so loose as to fall down.

Mr. Poppert uses cords that are run over glass cylinders, thereby avoiding the trouble caused by cords slipping off, and the squeaking of pulleys. The construction is so simple that they cannot get out of order and are operated with perfect ease and without noise, a light touch of the finger being sufficient to move them. Wood sliding in wood is always subject to swelling. To avoid this the blinds are held in place by metal attachments, and, therefore, never affected by the weather. They can be taken out to clean, the guideways remaining unchanged in their places, and do not interfere in any manner with curtains, shades or window ornaments. They have come into general favor by their merits and are recommended by all who have used them.

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TRADE NOTES.

THE Buffalo Forge Company has changed its New York office from 406 Havemeyer Building, 26 Cortlandt street, to larger and more commodious headquarters at 114 and 115 Taylor building, 39 and 41 Cortlandt street.

IF I. P. Frink, of New York, needed any introduction to Boston architects he could desire no better opportunity than the coming exhibition of the Boston Architectural Club, which this year will be held in the gallery of the St. Botolph Club. Mr. Frink has recently put into this gallery his system of picture lighting, and it is now one of the best lighted galleries in the country. Every Boston architect is familiar with the St. Botolph Club gallery, through the many delightful private exhibitions that are each season given there, and he cannot help noticing the great difference between the old and the new methods of artificial lighting.

ATTENTION is called to Brown Brothers Manufacturing Company, corner Jackson boulevard and Clinton street, manufacturers of sidewalk and vault lights. They were established in 1860. Send for catalogue. They solicit correspondence from architects. Work will be satisfactorily done in any part of the United States.

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MERCHANT & COMPANY, INCORPORATED, of Philadelphia, New York and Chicago, have recently received an order from the War Department for 786 of their galvanized "Star" ventilators, for use on the officers' quarters and barracks to be erected at Havana and Matanzas, Cuba. There will be 587 "Star" ventilators, 24 inches diameter, and 199 14 inches diameter. Great promptness is necessary in the delivery of these "Star" ventilators, which the exceptional facilities of Merchant & Company, Incorporated, will enable them to accomplish. Some idea of the size of the order can be had when it is stated that if these ventilators were placed in a line with their edges touching, they would cover a distance of nearly half a mile. Within the last few months Merchant & Company, Incorporated, have also supplied 500 18-inch ventilators for the new Government hospitals at Fortress Monroe and at Savannah.

A FINE half-tone plate, about 11 by 15 inches in size, of the new Terminal Station at Boston, from a negative by Soderholtz, is being sent out to architects by Mr. Samuel Cabot, of Boston. Interesting statistics in regard to the building (which is the largest railway station in the world) are given, and attention is called to the fact that 62,000 square feet of Cabot's Insulating Quilt were used to insulate the heating and ventilating ducts, under specifications of Prof. S. Homer Woodbridge, the expert, who has used the quilt many times before in his work, notably the Rutland Hospital at Rutland, Mass., the High School at Newton, Mass., the Insane Hospital at Medfield, Mass., etc. The quilt is made with and without asbestos covering, and is a wonderfully efficient and cheap insulator and deadener; and it is claimed for the asbestos quilt that it is the only article made which combines the qualities of heat insulation, sound deadening and fireproofing.

THE type of architecture now generally known as "Chicago construction" has at last been put to the severest possible test and has emerged from the trial triumphant. In the earthquake at San Francisco, March 30, the destruction was general among buildings constructed in accordance with the old rules of architecture. Solidity of foundations and thickness of walls did not avail as protection against the seismic shocks. But the nineteen-story Spreckels building, the tallest in the city, was not injured in the least, though it swayed like a tree in a storm. Nothing could be more conclusive as to the stability of these sky scrapers, which are merely interlaced skeletons of steel beams veneered with brick, stone or terra cotta. Nothing can disturb their equilibrium. The only disaster possible would be an actual yawning of the earth which should engulf them entire. Otherwise they are proof against anything short of bombardment by high-power guns.

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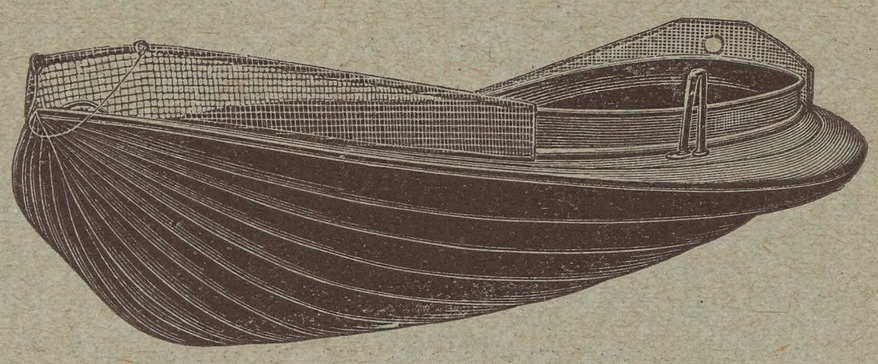

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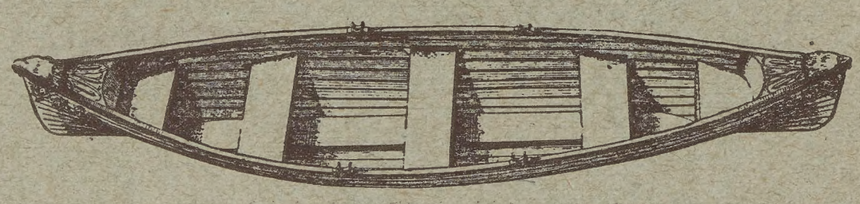

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